DRAFT FINAL

ENVIRONMENTAL ASSESSMENT

Bi-County Solid Waste Management System/
Fort Campbell Military Reservation Land Transfer
Montgomery County, Tennessee, and Trigg County, Kentucky

Prepared for:

Bi-County Solid Waste Management System
3212 Dover Road
Woodlawn, Tennessee 37191

Prepared by:

EnSafe Inc.
220 Athens Way, Suite 410
Nashville, Tennessee 37228
(615) 255-9300
www.ensafe.com

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ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) addressed the proposed action to transfer approximately 670 acres in Trigg County, Kentucky, and Stewart County, Tennessee, owned by Bi-County Solid Waste Management Systems (Bi-County) to Fort Campbell Military Reservation. In return, Fort Campbell will transfer approximately 358 acres in Montgomery County, Tennessee, to Bi-County. This EA has been developed in accordance with the National Environmental Policy Act and implementing regulations issued by the Council on Environmental Quality (40-CFR-1500-1508) and the Army (32 CFR 51). Its purpose is to inform decision-makers and the public of the likely environmental and socioeconomic consequences of the proposed action and alternatives.

An **EXECUTIVE SUMMARY** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

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APPENDICES

ACRONYMS AND ABBREVIATIONS

ADNL	A-weighted
BA	Biological Assessment
BMP	best management practice
c.y.	cubic yards
CDNL	C-weighted
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Facilitation Act
CFR	Code of Federal Regulations
CRM	Cultural Resources Manager
dB	decibels
DoD	Department of Defense
EA	Environmental Assessment
EDR	Environmental Database Report
ENMP	Environmental Noise Management Program
FPPA	Farmland Protection Policy Act
ICUZ	Installation Compatible Use Zone
INRMP	Integrated Natural Resources Plan
KAS	Kentucky Archaeological Survey
KDFWR	Kentucky Department of Fish and Wildlife Resources
KHC	Kentucky Heritage Council
KSNPC	Kentucky State Nature Preserves Commission
KSNPC	Kentucky State Nature Preserve Commission
MACT	Maximum Achievable Control Technology Standards
msl	mean sea level
NAAQS	national ambient air quality standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NWI	National Wetland Inventory
PA	Programmatic Agreement
PCPI	per capita income
ROI	regions of influence
RTE	rare, endangered, threatened
SR	State Road
SWPPP	Storm Water Pollution Prevention Plan
TAPCR	Tennessee Air Pollution Control Regulations
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TDSWM	Tennessee Department of Storm Water Management
TVA	Tennessee Valley Authority
USACE	U.S Army Corps of Engineer

USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOCs	volatile organic compounds

Bi-County Solid Waste Management Systems/Fort Campbell Military Reservation
Land Transfer
Finding of No Significant Impact
Fort Campbell, Kentucky

Pursuant to the Council on Environmental Quality (CEQ) Regulations Title 40 of the Code of Federal Regulations Parts 1500-1508 (40 CFR Parts 1500-1508) for implementing the procedural provisions of the National Environmental Policy Act (42 U.S.C. 4321 et seq.) and Army Regulation (AR) 200-1 Environmental Protection and Enhancement and 32 CFR 651 (AR 200-2 Environmental Effects of Army Actions), conducted an Environmental Assessment (EA) of the potential environmental and socioeconomic effects associated with land transfers between Bi-County Solid Waste Management Systems and Fort Campbell.

Purpose and Need

The proposed land transfer of 358 acres of Fort Campbell property, located adjacent to Bi-County Landfill, for 670 acres of property in Trigg County, Kentucky, is necessary to meet the region's solid waste disposal requirements. The additional acreage will allow Bi-County to optimize available air space and capital equipment at the current landfill and meet the region's long-term solid waste disposal requirements by utilizing land contiguous to the existing landfill. A summary of the purpose and need is listed below:

- avoid permitting a new solid waste landfill within the region.
- reduce financial burden of region/county.
- optimize available capacity of the current landfill acreage.
- meet the region's solid waste disposal needs.
- optimize current infrastructure (roads, processing equipment, etc.).

Fort Campbell will acquire approximately 670 acres of land in Trigg County, Kentucky, approximately twice the amount of acreage as that received by Bi-County. The land will be used for various activities, including training and maneuver purposes as deemed necessary.

Proposed Action

The Bi-County Solid Waste Management System intends to meet the region's solid waste disposal need by permitting additional landfill airspace. Bi-County is proposing a land transfer of approximately 670 acres of Trigg County, Kentucky, and Stewart County, Tennessee, property (Trigg County property) to Fort Campbell Military Reservation in exchange for approximately 358 acres of Montgomery County, Tennessee, property owned by Fort Campbell and located adjacent to Bi-County Landfill (Fort Campbell property). The plan is to expand the existing Bi-County Landfill northward and westward on the Fort Campbell property. The current Bi-County Landfill has an

estimated remaining life of approximately four years for Class I waste disposal. Additionally, based upon current needs, not enough soil is available on the current Bi-County property to meet the requirements to properly maintain the landfill. Receiving land from Fort Campbell would not only significantly extend the Class I disposal life but would also save the cost of purchasing soil and having it hauled to the landfill. Obtaining this property adjacent to current landfill operations would also allow the existing property to be optimized and would allow the continued use of facility structures/equipment.

Alternative Considered

The alternative to the proposed action that was considered was: relocation of the Bi-County landfill. The alternative was considered undesirable because of economic, environmental, and social reasons and, therefore, was not further considered. As prescribed by CEQ regulations, the EA also evaluated the no action alternative, which would consist of allowing the life of the landfill to expire and imposing the need to contract solid waste disposal services.

Factors Considered in Determining That No Environmental Impact Statement is Required

The EA, which is attached and incorporated by this Finding of No Significant Impact, examined the potential effects of the proposed action and the no action alternative on 10 resource areas and areas of environmental and socioeconomic concern: land use, air quality, noise, topography, geology, soils and prime farmland, water resources, biological resources, cultural resources, and socioeconomics (including environmental justice).

Fort Campbell Property

Implementation of the proposed action would result in a combination of short-term intermittent minor to short-term moderate adverse effects. There will also be a combination of intermittent minor to long-term adverse effects. However, the overall proposed action will provide long-term beneficial effects to the human and natural environment.

Trigg County Property

Implementation of the proposed action would result in a combination of short-term intermittent negligible to short-term minor adverse effects. There will also be a combination of long-term minor to moderate adverse effects as well as long-term beneficial effects for human and natural environment.

Compliance with Section 7 of the Endangered Species Act was completed by submitting a letter to the United States Fish and Wildlife Service Cookeville Field Office describing the proposed action and the beneficial effects it will have on habitat for species. In a response dated December 8, 2005, the United States Fish and Wildlife Service concurred with our conclusion that the

described project will not adversely affect listed species.

Cumulative Effects

Cumulative effects and mitigation from implementing the proposed action are included:

Fort Campbell Property

During the expansion of the landfill on Fort Campbell property, construction and operation activities will occur over several years. During the life of the expanded landfill, there will be long-term adverse effects on topography and soils. Long-term moderate adverse effects on land use, air quality, noise, surface waters, recreation, and aesthetic/visual environments are anticipated. Additionally, there will be short-term intermittent minor adverse effects on water quality due to soil erosion during landfill construction. In accordance with Federal and the Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 Bi-County would employ safeguards to protect the environment during construction and operation activities at the landfill.

Mitigation measures such as the use of buffer zones and erosion control measures (detention and retention ponds) to protect wetlands and waterways will be implemented. Removal of only necessary vegetation and the replanting of native species will enhance visual aspects to the area and provide a sound barrier.

Long-term moderate and short-term moderate adverse cumulative effects on the biology of the property may be anticipated.

Long-term beneficial effects on human and natural environment are anticipated.

Mitigation through the Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 allows for protection of the property, such as 200-foot buffer zones along streams, and will prevent long-term effects to the rare, threatened, and endangered species mentioned in section 4.6.

Trigg County Property

Fort Campbell borders the Trigg County property on the east side. During training it is determined that long-term moderate adverse effects on the environment related to noise are expected. Short-term minor to negligible adverse effects on air, soils water resources, and biology are also anticipated.

Long-term beneficial effects with the transfer of the land to Fort Campbell would be expected. State and federal regulations regarding the protection of the property will be adhered to. Fort Campbell will follow management measures outlined in the Integrated Natural Resources Plan (INRMP) and utilize available methods to protect the environment during activities. Mitigation

actions pertaining to air quality, noise controls, preservation of vegetation, and soils and surface waters protection will be adhered to.

Conclusion

Based on the EA, it has been determined that implementation of the proposed action will have no significant direct, indirect, or cumulative impacts on the quality of the natural or human environment. Long-term beneficial effects on the human environment are anticipated. Because no significant environmental impacts will result from implementation of the proposed action, an Environmental Impact Statement is not required and will not be prepared.

Public Comment

The EA and Finding of No Significant Impact are available for review and comment for 15 days, beginning January 6, 2006, through January 21 2006. Copies of the EA and Draft FNSI can be obtained by contacting Ms. Lee Carolan at EnSafe Inc., 220 Athens Way, Suite 410, Nashville, TN 37228 or by e-mail requests to lcarolan@ensafe.com, or online at http://www.campbell.army.mil/envdiv. Copies have also been provided to the following libraries: Christian County Library; Clarksville-Montgomery County Library; Stewart County Library: Robert F. Sink Library; and the John L. Street Library. Comments on the EA and Draft FNSI should be submitted to Mr. Eric Cloud, NEPA Program Manager, Conservation Branch, ATTN: AFZB-PW-E-R 865 16th Street, Fort Campbell, KY 42223-5310 at the physical address given above no later than January 21, 2006.

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Reviewed by Larry D. Ruggley
COL, SF
Garrison Commander

_____

Date

Bi-County Solid Waste Management Systems/Fort Campbell Military Reservation
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Conclusion

Based on the EA, it has been determined that implementation of the proposed action will have no significant direct, indirect, or cumulative impacts on the quality of the natural or human environment. Long-term beneficial effects on the human environment are anticipated. Because no significant environmental impacts will result from implementation of the proposed action, an Environmental Impact Statement is not required and will not be prepared.

Public Comment

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_____

Reviewed by Pete Reed
Director
Bi-County Solid Waste Management Systems

_____

Date

ENVIRONMENTAL ASSESSMENT
SIGNATURE SHEET

Prepared By:

Lee E. Carolan, **Date**

Senior Environmental Biologist

EnSafe, Inc.

Reviewed by:

Mr. James Duttweiler **Date**
Director of Public Works
Fort Campbell, KY

Accepted by:

Larry D. Ruggley **Date**

Colonel/SF

Garrison Commander

Approved By:

Peter Reed **Date**

Director

Bi-County Solid Waste Management Systems

Environmental Assessment

LEAD AGENCY: Fort Campbell, Kentucky

TITLE OF PROPOSED ACTION: Bi-County Solid Waste Management System/
Fort Campbell Military Reservation Land Transfer
Montgomery County, Tennessee, and Trigg County, Kentucky

AFFECTED JURISDICTION: Montgomery and Stewart Counties in Tennessee and Trigg County in Kentucky.

PREPARED BY: Lee E. Carolan, Senior Environmental Biologist, and Jose Garcia, Biologist, of EnSafe Inc.

APPROVED BY: Larry D. Ruggley, Colonel, SF, Garrison Commander

ABSTRACT: This Environmental Assessment (EA) considers the proposed land transfer of 358 acres of Fort Campbell property, located adjacent to Bi-County Landfill, for 670 acres of property in Trigg County, Kentucky, adjacent to Fort Campbell Military Reservation. The EA identifies, evaluates, and documents the effects of the land transfer between the U.S. Army and Bi-County Solid Waste Management Systems. A no action alternative is also evaluated. Implementation of the proposed action is not expected to result in significant environmental impacts. Therefore, preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact (FNSI) will be published in accordance with the Army's National Environmental Policy Act regulation.

REVIEW COMMENT DEADLINE: The EA and FNSI are available for review and comment for 15 days, beginning January 6, 2006, through January 21, 2006. Copies of the EA and Draft FNSI can be obtained by contacting Ms. Carolan at EnSafe Inc., 220 Athens Way, Suite 410, Nashville, TN 37228 or by e-mail requests to lcarolan@ensafe.com or online at http://www.campbell.army.mil/envdiv. Copies have also been provided to the following libraries: Clarksville-Montgomery County Library; Stewart County Library: Robert F. Sink Library; and the John L. Street Library. Comments on the EA and Draft FNSI should be submitted Mr. Eric Cloud, NEPA Program Manager, Conservation Branch, ATTN: AFZB-PW-E-R, 865 16th Street, Fort Campbell, Kentucky 42223-5310 at the physical address given above no later than January 21, 2006.

EXECUTIVE SUMMARY

Introduction

Bi-County Solid Waste Management Systems (Bi-County) is a local government authority that was established between Montgomery County and Stewart County, Tennessee, in 1974 and is now governed by a seven-member board. Bi-County is known worldwide for operating an environmentally sound Class I landfill that meets or exceeds the federal and state solid waste regulations. Bi-County was the first government-run landfill in Tennessee to meet the Subtitle D regulations for solid waste. Bi-County manages and operates convenience centers in both counties and a landfill in Montgomery County.

The current Bi-County Landfill sits on an approximately 200-acre tract of land that was originally a potion of the Fort Campbell Military Reservation. The landfill is permitted for the disposal of Class I and Class IV solid waste. The Bi-County Class I landfill meets or exceeds the Subtitle D regulations, which include a flexible membrane liner and a leachate collection system. In 2000, Bi-County obtained approval to expand Class IV operations. The new 32.5-acre Class IV facility is located on top of a former Class I disposal area. Financial assurance for ongoing operations and post-closure cost for the landfill are being collected through tipping fees and landfill user fees.

Based upon the current rate of disposal of Class I waste, the existing permitted airspace is limited to approximately four years of life. In addition, Bi-County is currently required to purchase and transport soils from offsite sources to meet regulatory obligations for cover materials. The existing 200-acre Bi-County property has limited soil available or space for development of landfill control structures. Obtaining land adjacent to the landfill would not only extend the operating life of the Class I facility but would save the cost of purchasing soil and having it hauled onto the site. Obtaining property adjacent to the current landfill operations would also allow the existing property to be better utilized and would allow the continued use of the facility structures/infrastructure.

Proposed Action and Alternatives

The Bi-County Solid Waste Management System needs to meet the region's solid waste disposal need by permitting additional landfill airspace. Bi-County is proposing a land transfer of approximately 670 acres of Trigg County, Kentucky, and Stewart County,

Tennessee, property (Trigg County property) to Fort Campbell Military Reservation in exchange for approximately 358-acres of Montgomery County, Tennessee, property located adjacent to Bi-County Landfill (Fort Campbell property). The plan is to expand the existing Bi-County Landfill northward and westward on approximately 358 acres of Fort Campbell property. The current Bi-County Landfill has an estimated life of less than four years for Class I waste disposal. Additionally, based upon current needs, not enough soil is available on the current Bi-County property to meet the requirements to properly maintain the landfill. Receiving land from Fort Campbell would not only significantly extend the Class I disposal life but would also save the cost of purchasing soil and having it hauled to the landfill. Obtaining this property adjacent to current landfill operations would also allow the existing property to be better utilized and would allow the continued use of facility structures/equipment. Based on current fill rates, the useful life of the landfill would increase by approximately 90 years.

Fort Campbell will receive 670 acres, thus increasing the size of the base by approximately 312 acres. The property is a mixture of forest and agriculture land. The topography, water resources, and vegetation diversity coupled with the property's rural setting may make it more favorable for military training purposes.

The alternative to the proposed action is the relocation of the landfill, which is undesirable for several reasons, such as economic, social, and environmental, and given the time constraints of purchasing property, project delays, and permitting requirements. The approximate time frame for relocation is six years or more.

The Environmental Assessment (EA) analyzes the proposed action (the preferred alternative) and the no action alternative. The focus of the EA is on environmental effects that could occur within the first 10 years (up through 2016) of project implementation.

Environmental Consequences

The EA evaluates potential effects on land use, air quality, noise, topography, geology, and soils, as well as water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), aesthetics, and visual resources. For each resource, the predicted effects from both the proposed action and the no action alternative are briefly described below.

Land Use

Fort Campbell Property

Long-term moderate effects to the land use are anticipated with the development of the landfill. Currently the property is undeveloped and vegetated and is used for training maneuvers. When the transfer takes place the land will be cleared of vegetation as the landfill expands. Clearing of vegetation will displace some species and their will be some species lost.

The surrounding properties are landfill and vegetated, undeveloped land, so overall use of the land for the surrounding area will not drastically change.

Long-term beneficial affects would be expected as well, because solid waste disposal for the area would continue to be available to the communities.

Trigg County Property

Long-term beneficial effects are anticipated. Currently the undeveloped land is under private ownership and is located to the west of Fort Campbell. Transfer of the land to Fort Campbell would allow protection of the area under federal and state regulations.

Air Quality

Fort Campbell Property

Long-term moderate adverse effects may be anticipated with the proposed expansion of the landfill. The proposed addition of the landfill operations to the 358-acre tract of land would increase potential air emissions due to landfill gas production and vehicular traffic.

Trigg County Property

The proposed transfer of property from private ownership to Fort Campbell will have long-term beneficial effects regarding air quality. Fort Campbell is required to follow federal and state regulations and the property will be protected by these regulations.

Noise

Fort Campbell Property

Long-term moderate effects may be anticipated with the proposed action. Construction activities on the site will increase noise levels.

Long term beneficial effects could also be expected as a result of implementing the proposed action. Due to vegetative buffers located along the perimeter of the property, noise from the landfill is mitigated. Residents located near the landfill would be more removed from the landfill cells than they are now. No significant adverse offsite noise effects would be expected.

Trigg County Property

Long-term moderate adverse effects would be expected as a result of the proposed action. There will be an increase in noise from helicopters and other activities associated with training exercises.

Long-term beneficial effects regarding the property would be expected. The property will fall under federal protection and noise will be regulated by state and federal governments.

Topography, Geology, and Soils

Topography

Fort Campbell Property

The proposed action will have long-term adverse effects on the topography of the property with the landfill expansion. As landfill cells are created, modification of the existing topography will occur.

Long-term beneficial effects are anticipated because of the use of the current landfill, which will be extended to prevent the need for relocation to an alternate site.

Trigg County Property

The proposed action will have no adverse effects on the topography of the property, but long-term beneficial effects would be expected. The topography of the property will not change because Fort Campbell has no plans to develop the property.

Geology

Fort Campbell Property

No adverse effects are expected on the property.

Trigg County Property

No adverse effects are expected on the property, but long-term beneficial effects would be

anticipated. The actions regarding military training will not have an adverse effect on the property. There are no plans by Fort Campbell to develop the property so the integrity of the land will stay the same.

Soils

Fort Campbell Property

Long-term adverse effects are expected on soils. Components such as access roads, soil borrow areas, and pond construction on the property will influence and affect original soils.

Trigg County Property

Short-term minor adverse effects are expected on site soils during training periods and in areas where general erosion is occurring.

Long-term beneficial effects regarding soils can be expected with the land transfer from private to federal property. The property will be protected by federal and state regulations and there are no plans for development.

Prime Farmland

Fort Campbell Property

No adverse effects on the property are anticipated. The land will not be utilized as farmland in the future.

Trigg County Property

No adverse effects on the property are anticipated. The land will not be utilized as farmland in the future.

Water Resources

Surface Waters

Fort Campbell Property

Short-term moderate adverse effects and long-term minor adverse effects would be anticipated.

Adherence to Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 and stormwater regulations will assist in mitigating significant impacts.

Trigg County Property

Short-term intermittent minor adverse effects would be expected on the property due to military training. An impact zone associated with Fort Campbell is located east of the subject property. The subject property receives storm water from the impact zone via tributaries and streams. Areas considered impact zones, zones of potentially lower water quality, are regulated for water quality standards. Fort Campbell conducts intensive water quality monitoring in all streams flowing through impact zones.

Long-term beneficial effects regarding surface water resources would be expected. State and federal regulations regarding proper protection of surface waters will be followed.

Groundwater

Fort Campbell Property

Short-term intermittent minor adverse effects and long-term negligible adverse effects would be expected for groundwater resources. The Tennessee Solid Waste Processing and Disposal Rule 1200-1-7.04 specifically addresses leachate migration control standards, geologic buffers, composite liner, leachate collection, and final cover.

Trigg County Property

Short-term intermittent minor adverse effects would be expected for groundwater resources. Fort Campbell will adhere to Best Management Practices for water quality as specified in the Integrated Natural Resources Management Plan (INRMP) and will comply with State of Tennessee and State of Kentucky groundwater regulations.

Long-term beneficial effects regarding groundwater resources would be expected. State and federal regulations regarding proper protection of groundwater will be followed.

Floodplains and Wetlands

Fort Campbell Property

Short-term intermittent minor adverse effects to wetlands may be expected. As the landfill is developed, potential (isolated and jurisdictional) wetlands may be impacted. No impacts to floodplains are anticipated. The Tennessee Solid Waste Processing and Disposal Rule 1200-1-4-.04 specifically address leachate migration control standards, geologic buffers, composite liner, leachate collection, and final cover. A 200-foot buffer area surrounding all intermittent and perennial streams will be in place.

Trigg County Property

Long-term beneficial effects are anticipated due to acquisition of the property by federal government. This will allow protection under state and federal regulations regarding floodplains and wetlands.

Long-term beneficial effects are to be expected. Protection of these areas following federal and state regulations is anticipated.

Biological Resources

Fort Campbell Property

Effects on flora, fauna, and threatened and endangered species are short-term moderate, long-term minor beneficial, and short-term negligible adverse effects; long-term beneficial effects are expected for fauna and threatened and endangered species.

Trigg County Property

Long-term beneficial effects are expected for flora, fauna, and threatened and endangered species. Federal and state regulations will be adhered to once the property is in federal ownership. The property will be protected.

Cultural Resources

Fort Campbell Property

No effects are anticipated on cultural resources. The Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 establishes a 200-foot buffer zone along intermittent and perennial streams. Phase I, II, and III site investigations have been conducted and the only known cultural site within the proposed action land transfer is within the 200-foot buffer zone.

Trigg County Property

No effects are anticipated on cultural sites on the property. The property will fall under federal ownership and Fort Campbell will follow regulations and guidelines required by federal and state agencies to mitigate for potential impacts on sites.

Socioeconomic Conditions

Regional Economic Development, Demographics, Quality of Life, Recreation, and Environmental Justice

Fort Campbell Property

Short- and long-term beneficial effects would be expected for economic development and quality of life. No effects are anticipated for demographics and environmental justice. Long-term moderate adverse effects on recreation would be expected because the landfill expansion will place property under private ownership and no recreation will be allowed.

Trigg County Property

Long-term beneficial effects may be anticipated for quality of life and potentially for recreational opportunities if recreation is allowed or considered by Fort Campbell. Although short-term minor adverse effects may be anticipated on the quality of life with the increased usage by Fort Campbell of the property, the overall result is beneficial because the property will not be sold and it will be protected by federal regulations.

Aesthetics and Visual Resources

Fort Campbell Property

Short- and long-term adverse effects and long-term beneficial effects are anticipated. The visual aspects of the property will be maintained and enhanced.

Long-term beneficial effects would be associated with the construction of retention basins on the property to manage storm water runoff. The retention basins will provide aesthetic value to the perimeter of the landfill by providing shallow water habitat for vegetation, terrestrial, and aquatic species.

Trigg County Property

Long-term beneficial effects are anticipated. The visual aspects of the property will be maintained and enhanced through federal regulations regarding land use by Fort Campbell.

Consequences of the No Action Alternative

Only those actions that would be affected are discussed below.

Land Use

Trigg County Property

The property is heavily wooded with some agricultural activity to the west and south. At this time there is very little use of the property. Potentially short-term and long-term adverse effects may be anticipated. The property is not likely to be utilized by Bi-County, thus the property would most likely be sold and/or revenue producing alternatives would

be explored.

Long-term effects on the property and surrounding land use will be dependant upon eventual property ownership.

Air

Trigg County Property

Short-term and long-term adverse effects may be anticipated on the ambient air. The property is not likely to be utilized by Bi-County, thus the property would most likely be sold and/or revenue producing alternatives would be explored.

Topography

Trigg County Property

Short-term and long-term adverse effects may be anticipated on topographic conditions.

Geology

Trigg County Property

Short-term and long-term adverse effects may be anticipated on geologic conditions.

Soils

Trigg County Property

Short-term and long-term adverse effects may be anticipated on soils.

Water Resources

Surface Waters, Groundwater, and Floodplains and Wetlands

Trigg County Property

The property would not be subject to federal land management requirement/protection it is anticipated that there could potentially be short-term and/or long-term adverse effects on the property.

Biological Resources

Flora, Fauna, and Rare, Threatened, and Endangered Species, and Unique and/or Critical Habitat

Trigg County Property

There could be land use changes on the property if the no action alternative is chosen. Bi-

County will not utilize this property, so it will most likely be sold. It is likely that short- and long-term adverse effects to the flora, fauna, and rare, threatened, and endangered species will occur due to loss of habitat.

Socioeconomics

Regional Economic Development

Fort Campbell Property

There would be long-term adverse effects on the economics in the region if the landfill expansion does not occur. It is likely that the landfill life could expire causing relocation of the landfill. If this occurs the cost of landfilling in the area would likely increase.

Trigg County

Short-term and long-term adverse effects on the economics in the area could be anticipated. Stewart County utilizes Bi-County Landfill and if relocation occurs an increase in cost of landfilling could occur.

Quality of Life

Fort Campbell Property

Short-term minor adverse and long-term minor beneficial effects are anticipated. No relocation of the landfill will take place.

Trigg County Property

Long-term minor adverse effects could be anticipated. The property owned by Bi-County would be sold and this may affect the quality of life for surrounding residents.

Recreational

Trigg County

Long-term minor adverse effects could be expected. If the property is transferred to Fort Campbell it will be protected under state and federal regulations potentially allowing the public to use the property for recreational purposes. If the property remains under private ownership it could become developed and the potential for recreational use would be lost.

Aesthetic and Visual Resources

Trigg County Property

Short-term and long-term adverse effects would be anticipated if this alternative is chosen.

Bi-County will not utilize the property; therefore it will most likely be sold. If this occurs the aesthetic and visual resources would be affected.

Summary of Potential Environmental and Socioeconomic Consequences				
	Proposed Action		No Action Alternative	
Resource	Fort Campbell	Trigg County	Fort Campbell	Trigg County
•Land Use	•Long-term moderate effects	•Long-term beneficial	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Air Quality	•Long-term moderate effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Noise	•Long-term moderate effects •Long-term beneficial effects	•Long-term moderate adverse effects •Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
Topography, Geology, and Soils				
•Topography	• Long-term adverse effects •Long-term beneficial effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Geology	•No effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Soils	•Long-term adverse effects	•Short-term minor adverse effects •Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Prime Farmland	•No adverse effects	•No adverse effects	•No adverse effects	•No adverse effects
Water Resources				
•Surface Waters	•Short-term moderate adverse effects •Long-term minor adverse effects	•Short-term intermittent minor adverse effects •Long-term beneficial effects	•No adverse effects	• Short-term adverse effects
•Ground Water	•Short-term intermittent minor effects •Long-term negligible adverse effects	•Short-term intermittent minor adverse effects •Long-term beneficial effects	•No adverse effects	• Long-term adverse effects
•Floodplains & Wetland	•Short-term intermittent minor adverse effects to wetlands	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse

Summary of Potential Environmental and Socioeconomic Consequences				
	Proposed Action		**No Action Alternative**	
Resource	**Fort Campbell**	**Trigg County**	**Fort Campbell**	**Trigg County**
	•No impact to floodplains			effects
Biological Resources				
•Flora	•Short-term adverse effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Fauna	•Short-term moderate adverse, and long-term minor beneficial effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Rare, Threatened and Endangered Species	•Short-term negligible effects •Long-term beneficial effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
Cultural Resources				
•Cultural Resources	•No effects	•No effects	•No effects	•No effects
Socioeconomics				
•Regional Economic Development	• Long-term beneficial effects	•No adverse effects	•Long-term adverse effects	• Short-term adverse effects •Long-term adverse effects
•Demographics	•No adverse effects	•No adverse effects	•No effects	•No effects
•Quality of Life	•Short-term beneficial effects and/or •Long-term beneficial effects	•Long-term beneficial effects •Short-term minor adverse effects	•Short-term minor adverse effects •Long-term minor beneficial effects	•Long-term minor adverse effects
•Recreational	•Long-term moderate adverse effects	•Long-term minor beneficial effects	•No effects	•Long-term minor adverse effects
•Environmental Justice	•No adverse effects	•No adverse effects	•No adverse effects	•No adverse effects
•Aesthetic and Visual	•Short- and long-term adverse effects •Long-term beneficial effects	•Long-term beneficial effects	•No adverse effects	•Short-term adverse effects •Long-term adverse effects

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1.0 PURPOSE, NEED, AND SCOPE

1.1 Background

Bi-County Solid Waste Management System (Bi-County) is a local government authority established by Montgomery County and Stewart County, Tennessee. The location of the Bi-County Landfill is depicted in Figure 1, Appendix A. Bi-County manages and operates convenience centers in both counties and a landfill in Montgomery County. A proposed land transfer is necessary to allow for future expansion of the existing Class I and Class IV landfill, which will exhaust its estimated remaining life in less than four years. The additional landfill will also provide suitable soil cover for future landfill operations. Currently, soil is being purchased from offsite locations and transported to the landfill. Receiving land from Fort Campbell would allow Bi-County not only to significantly extend the Class I disposal life but would also be more economical than purchasing soil and having it hauled to the landfill.

The current Bi-County Landfill sits on an approximately 200-acre tract of land and is permitted for the disposal of Class I and Class IV solid waste. The Bi-County Class I landfill meets or is better than the Subtitle D regulations, which include a flexible membrane liner and a leachate collection system. In 2000, Bi-County obtained approval to expand Class IV operations. The new 32.5-acre Class IV facility is located on top of a former Class I facility. Financial assurance for ongoing operations and post-closure cost for the landfill are being collected through tipping fees and a landfill user fee charged to residents in Montgomery and Stewart Counties.

The Environmental Assessment (EA) is for a proposed land transfer of 358 acres of land on the Fort Campbell Military Reservation for 670 acres of land in Trigg County, Kentucky, owned by Bi-County Solid Waste System. The approximately 670 acres of property in Trigg County, Kentucky, is located adjacent to the western boundary of the military reservation. The EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as implemented by the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500 et. seq.), Army Regulation (AR) 200-1 Environmental Protection and Enhancement and 32 CFR 651 (AR 200-2 Environmental Effects of Army Actions). This EA will allow the Army and Bi-County to evaluate the potential impacts of the alternatives considered for this land transfer.

1.2 Purpose of and Need for the Proposed Action

The proposed land transfer of 358 acres of Fort Campbell property, located adjacent to Bi-County Landfill, for 670 acres of property in Trigg County, Kentucky, is necessary to meet the region's solid waste disposal requirements. The additional acreage will allow Bi-County to optimize available air space and capital equipment at the current landfill and meet the region's long-term

solid waste disposal requirements by utilizing land contiguous to the existing landfill. A summary of the purpose and need is listed below:

- avoid permitting a new solid waste landfill within the region.
- reduce financial burden of region/county.
- optimize available capacity of the current landfill acreage.
- meet the region's solid waste disposal needs.
- optimize current infrastructure (roads, processing equipment, etc.).

Fort Campbell will acquire approximately 670 acres of land in Trigg County, Kentucky, for various training purposes. Fort Campbell would acquire approximately twice the amount of acreage divested in the land transfer which can be utilized for training and maneuver purposes as deemed necessary.

1.3 Scope of the Document

This EA identifies, documents, and evaluates the potential environmental effects of implementing the land transfer between Bi-County and Fort Campbell. Section 2.0 sets forth alternatives to the proposed action, including a no action alternative, and explains why certain alternatives are not evaluated. Section 3.0 describes the proposed action. Section 4.0 describes existing environmental conditions at the Fort Campbell and Trigg County properties that could be affected by the proposed action and identifies potential environmental effects that could occur upon implementation of each of the alternatives evaluated. Section 5.0 presents findings and conclusions regarding the potential environmental effects of the proposed action.

An interdisciplinary team made up of geologists, biologists, archaeologists, engineers, historians, environmental scientists, and military advisors reviewed the proposed action. Input from these individuals assisted in the identification of beneficial and adverse effects that may be associated with the proposed action. The document analyzes direct and indirect effects, as well as the potential for cumulative effects. Mitigation measures are discussed where appropriate.

This EA references information from documents obtained from Fort Campbell on actions that have taken place on or near the Fort Campbell property and from tax records obtained from Trigg County, Kentucky, relating to the past ownership of the property. These documents are referenced in this EA.

1.4 Public Involvement

The NEPA process is designed to involve the public in federal decision-making. Public involvement and intergovernmental coordination and consultation are recognized as essential elements in the development of an EA. Formal notification and opportunities for public participation, as well as informal coordination with government agencies and planners, have and will continue to occur throughout the EA process.

A copy of this EA will be made available for review at the Christian County Library at 101 Bethel Street, Hopkinsville, Kentucky 42240; the Clarksville-Montgomery County Library at 350 Pageant Lane, Suite 404, Clarksville, Tennessee 37042; the Stewart County Library at 102 Natcor Drive, Dover, Tennessee 37058; the Robert F. Sink Library at Building 38, Screaming Eagle Boulevard, Fort Campbell, Kentucky 42223; and the John L. Street Library at 244 Main Street, Cadiz, Kentucky 42211. Comments will be invited for a period of 15 days after publication of a Notice of 15-Day Period for Public Comment in the local newspapers, the Fort Campbell Courier, Clarksville Leaf-Chronicle, Cadiz Record, Kentucky New Era, and Stewart-Houston Times.

The Notice provided specific information identifying the project proponent and lead agency, a brief description of the project, where to find the EA, and how and when to provide comments. The public will be instructed to send written comments to the Fort Campbell Military Reservation, Conservation Branch, 865 16th Street, ATTN: AFZB-PW-E-R (Eric Cloud), Fort Campbell, Kentucky 42223-5310.

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 Proposed Action

This section presents information on the proposed action, as well as brief descriptions of hydrogeologic investigations and conceptual determinations of potential landfill airspace which frame the potential feasibility and benefits of the proposed action.

The Bi-County Solid Waste Management System needs to meet the region's solid waste disposal need by permitting additional landfill airspace. Bi-County is proposing a land transfer of approximately 670 acres of Trigg County, Kentucky, and Stewart County, Tennessee, property (Trigg County property) to Fort Campbell Military Reservation for approximately 358 acres of Montgomery County, Tennessee, property located adjacent to Bi-County Landfill (Fort Campbell property). The plan is to expand the existing Bi-County Landfill northward and westward on approximately 358 acres of Fort Campbell property. The current Bi-County Landfill has an estimated remaining life of less than four years for Class I waste disposal. Additionally, based upon current needs, not enough soil is available on the current Bi-County property to meet the requirements to properly maintain the landfill. Receiving land from Fort Campbell would not only significantly extend the Class I disposal life but would also save the cost of purchasing soil and having it hauled to the landfill. Obtaining this property adjacent to current landfill operations would also allow the existing property to be optimized and would allow the continued use of facility structures/equipment.

In 1999 Bi-County conducted a Preliminary Hydrogeologic Investigation on the proposed transfer property currently owned by Fort Campbell and located immediately north and west of the landfill (Figure 2, Appendix A). The Preliminary Hydrogeologic Investigation performed on this portion of the Fort Campbell property indicated that the land was suitable for use as a Class I facility.

Based upon Tennessee Solid Waste Regulatory requirements and discussions with Fort Campbell and Bi-County personnel, portions of this property will not be available for landfill development. Preliminary conceptual design indicates that approximately 113 acres of actual fill area are feasible. Approximately 90 acres of borrow area is identified to the northwest and west of the Bi-County property. The proposed fill area would be bounded by buffer zones and streams on the north, east, and west (Figure 5, Appendix A). Preliminary figures show that the gross airspace for landfilling would be about 23,000,000 cubic yards (c.y.). Allowing for final cover and other soil for intermediate cover, berms, etc., the net airspace is estimated to be 21,000,000 c.y. It is estimated that excavation to prepare the site would yield more than 5,000,000 c.y. of soil for use in ongoing

operations. Based on current fill rates at the Bi-County Landfill, this would provide a useful life of approximately 90 years.

Fort Campbell will receive 670 acres, thus increasing the size of the base by approximately 312 acres in Trigg County. The Trigg County property is relatively remote with a mixture of forest and agriculture land. The topographic, water resources, and vegetation diversity coupled with the property's rural setting make it more favorable for military training purposes.

3.0 ALTERNATIVES

3.1 Preferred Alternative

Implementation of the proposed action, as described in Section 2.1, is the preferred alternative. As proposed, 670 acres of Trigg County property owned by Bi-County and 358 acres of Fort Campbell property will be exchanged. Figure 1 and Figure 2, (Appendix A) depict the boundaries of the Fort Campbell and Trigg County properties as proposed in the preferred alternative. As proposed the additional property would allow Bi-County to meet ongoing and future needs at the landfill. The current permitted Class I airspace is limited to approximately four years of life. Soil is currently purchased and transported from offsite locations to meet ongoing regulatory obligations for cover materials. Additional property would also allow development of control structures, such as erosion control, to support current and future landfilling operations. The 670-acre property to be transferred to Fort Campbell will provide 312 additional acres in Trigg County for the military reservation. The Trigg County property is contiguous to the reservation.

3.2 Relocation of Bi-County Landfill Alternative

Bi-County would be required to permit and construct a new landfill within the region if additional contiguous property is not obtained. The relocation of the Bi-County Landfill would not be desirable for several reasons. The most compelling reasons are economic, environmental, and social. The economic reasons are predominantly based on the availability of soil and expansion of additional landfill air space. With the additional property, the landfill life expectancy is estimated to be extended by approximately 80 years thereby negating the high costs associated with the development of a new landfill. Table 1 estimates the costs associated with the development of a new landfill.

Siting a new landfill is a balance between identifying a property that can meet regulatory permitting requirements and is geographically located to serve the region. Regulatory requirements associated with the permitting of a solid waste landfill are extensive and available property that can meet the requirements is limited within the Bi-County region. The northern portion of the region is occupied by the Military reservation; properties to the east, toward Clarksville, are more densely populated with limited larger tracks of land available; the western and southern portions of the region have limited infrastructure (roads and utilities) and are more remotely located, increasing haul distances, which impact the economics of the landfill. In addition, operations are not conveniently located to support the region's citizens and industry. Evaluating environmental conditions and suitability at a new site within the region would require costly and extensive research over a short period of time with uncertain results. The hydrogeologic characteristics of the region further limit the number of properties that would be suitable for development of a new

landfill. In contrast, the Bi-County Landfill and the adjacent Fort Campbell property have been extensively studied providing comprehensive long-term data ensuring confidence in the decision-making process.

Social and environmental impacts are always a concern when locating a landfill. However, the use of the Fort Campbell property is believed to represent the least social or environmental impact to the region. To achieve similar life expectancy at a new landfill site, Bi-County would be required to obtain additional property for development of processing buildings, roads, buffers, and other support structures. The additional Fort Campbell acreage would provide isolation from community areas, maintain consistency of area land use, and minimize the amount of acreage needed to extend the region's solid waste disposal needs. The transfer of 670 acres to Fort Campbell will provide additional federally protected lands.

Several phases are involved in the development of a new landfill. Each phase has a range of necessary and potentially unavoidable time constraints and unforeseeable costs. Typical phases involved are:

Phase 1: Site Selection and Investigation. During this phase, sites for a proposed landfill are evaluated from a geotechnical and hydrogeologic standpoint, as well as from a variety of environmental factors.

Phase 2: Design and Regulatory Approval. Detailed plans and specifications are prepared, regulatory approvals and financial commitments are received, and infrastructure improvements are initiated.

Phase 3: Site Construction. This involves development of the support facilities and the development of the landfill's first one or two cells.

Phases 1 and 2 can take from 16 to 32 months, depending on the type of facility, public interest, public hearings, revisions, and appeals. Phase 3 can take from 12 to 18 months assuming no project delays.

The costs presented in Table 1 are estimates associated with the permitting, siting, and development, and capital costs expenditures required to initiate the development of a new landfill. In order to generate estimated costs a 400-acre parcel would be needed to provide similar disposal acres, including regulated setbacks and space for buildings. Initial tasks would be to acquire a

400-acre site in a similar region as the current Bi-County Landfill and then construct the necessary infrastructure needed to operate the new landfill. The table does not include the costs associated with operating the current Bi-County Landfill while at the same time developing the new landfill, nor does the table reflect the cost associated with maintaining financial assurance accounts for closure and post-closure activities at both the current landfill and a new landfill.

Table 1
Preliminary Permitting and Development (Capital)
Cost for a New Landfill

Initial Siting and Feasibility Review	
Legal, Consulting and Engineering Costs	$ 75,000
Investigation, Design, and Permitting of a Class I Landfill	
Develop Hydrogeologic Work Plan	$ 15,000
Part I Permit Application	$ 25,000
Survey/Data/Documents	
Conduct Hydrogeologic Study, Prepare & Submit Report[1]	$ 275,000
Part II Permit Application	$ 150,000
Survey/Mapping of Existing Conditions	
Engineering Design	
Final/Excavation Contours	
Liner and Cap Design	
Seismic Evaluation	
Interface Shear Evaluation	
Leachate Collection System	
Storm Water, Sediment & Erosion Control	
Prepare Design Documents	
AutoCADD Drawings Development	
Operations Manual	
Construction Quality Assurance (CQA) Plan	
Closure/Post Closure Plan	
TDEC Class I Permit Application Fee	$ 10,000
TDEC Class IV Permit Application Fee	$ 3,000
Public Comment/Relations	$ 27,000
(5% of Investigation, Design, and Permitting Costs)	
Property Acquisition for Development of the Landfill	
Property Acquisition[2]	
(400-acres @ ~$5,500/acre)	$ 2,200,000
Buildings	
Bale building and bale machine	$ 500,000
Administration office/Scale house	$ 200,000
Maintenance Building	$ 35,000
Fencing (~ $12 Linear Foot @ 16,780)	$ 200,000
Access Roads	$ 75,000
Utilities (electric, sewer, and phone)	$ 100,000
Ponds and Sediment Controls	$ 85,000

Table 1
Preliminary Permitting and Development (Capital)
Cost for a New Landfill

Machinery and Equipment	
Track Loaders, Graders, Compactors, Dump Trucks, Front end Loaders, Water truck, Leachate Trailers	$ 500,000
Liners and Leachate Collection System	
Cell 1[(3)] Preparation of 10 acres	$ 1,750,000
ESTIMATED TOTAL COST	**$ 6,225,000**

Notes:

(1) The amount estimated is dependant on the Tennessee Division of Solid Waste Management (TDSWM) requirements for soil borings with associated geotechnical testing. Additional costs will be incurred if subsurface conditions warrant a karst study with its associated dye tracer investigation of the property in question.

(2) The amount per acre is estimated based on location, an area equal distance from the City of Clarksville, located on frontage road.

(3) Assumes the first cell is approximately 10 acres in size. Cell development based on $150,000 per acre. Cost includes clearing and grubbing, clay liner, geotextile liner, leachate collection system, and gravel or sand layer.

3.3 No Action Alternative

The no action alternative consists of continued operations at the Bi-County Landfill. This would mean that current operations would be restricted and closure would be assured in approximately four years. Selection of the no action alternative would limit the Bi-County Landfill's ability to provide convenient, economical solid waste management for the region, as well as meet the requirements of the Solid Waste Management Act (Tennessee Code Annotated 68-2114-813).

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section discusses the physical characteristics of the properties and area, including land use, air quality noise, geology, soils, topography, prime farmland, and water resources associated with each site. This section also discusses biological resources, including plant and animal life, aquatic resources, and protected species. Also covered are socioeconomic concerns, as well as historical and cultural resources.

Fort Campbell Property

The 358-acre Fort Campbell property is located on the southern fringe of the Fort Campbell Military Reservation. Immediately south is the Bi-County Landfill and further south is Dover Road/U.S. - 79. A panhandle of the Fort Campbell property borders the western side of the Bi-County Landfill and extends toward Dover Road. To the east are 101st Airborne Road and the Fort Campbell landfill. The northern boundary of the 358-acre property is Fletcher's Fork Creek. The 358-acre Fort Campbell property is bordered by the military reservation to the north, east, and west, and Bi-County Landfill to the south.

Trigg County Property

The 670-acre Trigg County property is located south of Pugh Flat Church Road. The eastern boundary of the property is shared with the Fort Campbell Military Reservation property boundary. Approximately 360 acres are located in Trigg County, Kentucky, with the remaining 10 acres located in Stewart County, Tennessee. Approximately 80 acres of land extends west from the main property toward South Road and State Road 139.

4.1 Land Use

4.1.1 Affected Environments

Fort Campbell Property

The 358 acres of Fort Campbell property are currently utilized as limited training grounds to conduct military practice maneuvers. The area surrounding the Fort Campbell property consists of residential, light commercial, agricultural, and industrial uses. The Bi-County Landfill and U.S. 79 are adjacent to the property to the south. Fletcher's Fork Creek borders the property to the north. Fort Campbell Military Reservation is to the north, northeast, and northwest of the property. 101ST Airborne Road is immediately adjacent to the Fort Campbell property to the east. The Tennessee Valley Authority recently installed a high-voltage transmission power line, transecting north to south, on the eastern portion of the property along 101st Airborne Road. Fort Campbell operates a Class IV Landfill on approximately 85 acres of property located to the east and northeast

of the property. Residential and agricultural areas are concentrated along U.S. 79 to the south, southeast, and southwest.

The regional climate of Fort Campbell is characterized as humid subtropical, with hot humid summers and cool winters. The monthly mean high temperatures are 89 degrees Fahrenheit (F) in July and 45 F in January. Average annual precipitation is approximately 49 inches, and precipitation is generally well distributed over the year. The topography of the area ranges from comparatively flat to gently rolling hills.

Trigg County Property

The Trigg County property is predominantly wooded. To the west-southwest there are a few cultivated fields and a TVA power line that runs along the western portion of the property. The property is dissected via a network of old logging roads. Scott Branch runs north and south along Highway 139 on the western border of the property. According to a 1957 U.S. Geological Survey (USGS) topographical map and field surveys, four well sites and approximately 18 structures (barns, cabins, houses) were observed and field identified. There are several houses and a church located north-northeast and west-southwest of the property. There are no habitable structures on the property. Kentucky Heritage Council (KHC) and Kentucky Archaeological Survey (KAS) were contacted on July 27, 2004 to determine if these structures had been identified and included in appropriate historical registers. KHC and KAS contacted EnSafe by email and phone on July 28 and 30, 2004, respectively, and indicated there are no registered sites on this property. The cultural and archaeological reports are currently under review by the Kentucky State Historic Preservation Office and Tennessee State Historic Preservation Office.

The regional climate of the Trigg County Property is characterized as humid subtropical, with hot humid summers and cool winters. The monthly mean high temperatures are 89 degrees F in July and 45 F in January. Average annual precipitation is approximately 49 inches, and precipitation is generally well distributed over the year. The topography of the Trigg County property is characterized by steep slopes and draws that run north to south.

4.1.2 Consequences

4.1.2.1 Proposed Action

Fort Campbell Property

Long-term moderate effects to the land use are anticipated. The land is currently undeveloped and located immediately to the north and west of the Bi-County Landfill with the Fort Campbell landfill located to the east. Fletcher's Fork Creek is located along the northern boundary and is a tributary.

A small unnamed tributary forms the western boundary of the property. The military reservation occupies the land beyond Fletcher's Fork Creek and an unnamed tributary to the north and west, respectively. Tennessee Department of Transportation (TDOT) is expanding Dover Road/U.S. 79 to the south of the landfill, and Tennessee Valley Authority (TVA) has extended a utility line along the western edge of the property and landfill. The proposed action conforms to current land use in the area and does not conflict with neighboring land uses.

Land-use management will alleviate effects on land use. Tennessee Solid Waste Processing and Disposal Rule (1200-1-7-.04), which requires buffer zone standards for siting landfills. At a minimum, fill areas are to be located:

1. 100 feet from property lines
2. 500 feet from residences
3. 500 feet from downgradient wells used for drinking water by humans or livestock
4. 200 feet from normal boundaries of springs, streams, and lakes
5. A total site buffer with no constructed appurtenances within 50 feet of the property line

Trigg County Property

Long-term beneficial effects would be expected as a result of providing 670 acres to Fort Campbell. Land use associated with these 670 acres would be protected by Army Regulations. In addition, long-term solid waste disposal for the region would be available to the communities, and a new Class I landfill that could further adversely affect land use in the region would not be required.

Currently the land is undeveloped and is located on the western border of Fort Campbell Military Reservation. The property would be transferred from Bi-County, private ownership to Fort Campbell. The land transfer would allow the property to be subject to federal and state land management/protection. If the property were to remain with Bi-County, the property would not be subject to these protections.

4.1.2.2 No Action Alternative

Fort Campbell Property

The current land use on the Fort Campbell property is military training and maneuvers. This alternative would not change the use of the property. There is no adverse effect on land use anticipated.

No adverse effects on the surrounding land use would be expected.

Trigg County Property

The property is heavily wooded with some agricultural activity to the west and south. At this time there is very little use of the property. Short-term and long-term adverse effects may be anticipated. The property is not likely to be utilized by Bi-County, thus the property would likely be sold and/or revenue producing alternatives would be explored.

4.2 Air Quality

In a regulatory context, air quality can be defined in terms of attainment and non-attainment. Areas of the country where air pollution levels persistently exceed the national ambient air quality standards (NAAQS) for one or more pollutants are designated *non-attainment*, meaning they do not attain acceptable pollutant levels. Areas where the air pollution levels meet the NAAQS are designated as *attainment*.

The Fort Campbell and the Trigg County properties lie on the border of Kentucky and Tennessee, encompassing portions of four counties: Christian County and Trigg County, Kentucky, and Montgomery County and Stewart County, Tennessee. The counties of primary interest in this report are Montgomery County, Tennessee, and Trigg County, Kentucky. These two counties are in attainment for five of the six criteria air pollutants for which NAAQS standards apply: particulate matter, nitrogen oxides (NO_x), ozone, carbon monoxide, sulfur dioxide, and lead. Trigg County, Kentucky, is currently classified as attainment for ozone. However, the Clarksville-Hopkinsville area of Montgomery County, Tennessee, and Christian County, Kentucky, has been designated by the U.S. Environmental Protection Agency (USEPA) as non-attainment for ozone relative to the 8-hour ozone standard in the final rules promulgated on April 14, 2004.

Ozone formation is primarily due to the combination of the ozone precursors NO_x and volatile organic compounds (VOCs) with sunlight in the atmosphere. Non-attainment designation for ozone will typically affect industrial sources of NO_x and VOCs by requiring pollution control equipment to reduce emissions, particularly on large, new sources. Smaller sources of emissions, such as from mobile sources, contribute to ozone formation; as such, the State of Tennessee and Commonwealth of Kentucky are promulgating/have promulgated regulations to address emissions from motor vehicles including heavy diesel engines. Compliance with these requirements should minimize any adverse effect that any activity undertaken at the site should exert on air quality.

Ozone monitoring stations are located in Montgomery County, Tennessee, Christian County, Kentucky, and Trigg County, Kentucky.

Title 40 CFR Parts 6, 51, and 93 require federal agencies to determine conformance with general federal actions to state or federal implementation plans before approving any activities in non-attainment areas. Since a federal agency (Fort Campbell Military Reservation) is involved with the land transfer in a non-attainment area (Montgomery County, Tennessee), the conformance rules were reviewed for applicability.

The new area within Montgomery County will, after the land transfer, be controlled by Bi-County Landfill authorities, and no longer under the control of the federal agency. Per 40 CFR 93.153(c)(2)(xiv), the requirement to conduct a conformity determination is not applicable to *"Transfers of ownership, interests, and titles in land, facilities, and real and personal properties, regardless of the form or method of transfer."* Because the proposed Bi-County/Fort Campbell land transfer appears to meet the criteria for this exception, the preparation of a conformity determination is not necessary and was not performed. A Record of Non-Applicability (RONA) for General Conformity for both properties can be found in Appendix H.

4.2.1 Affected Environment

Fort Campbell Property

As noted in Section 4.1, Land Use, the current 358-acre tract at the Fort Campbell property in Montgomery County, Tennessee, is used as a training ground for conducting military practice maneuvers. The area surrounding the Fort Campbell property supports residential, light commercial, agricultural, and industrial uses. Currently, there are no notable air pollution issues from this undeveloped tract of land. The Fort Campbell base is a major source of air emissions and has a Title V operating permit; however no activities on the 358-acre parcel covered by this report are subject to permitting.

Trigg County Property

Also, as noted in Section 4.1, the Trigg County property is privately owned and predominantly wooded. Cultivated fields are located to the west-southwest and the property is traversed via a network of old logging roads. Currently, there is no notable air pollution issue associated with the undeveloped tracts of land. Fugitive dust emissions could be generated from the site activities, but these are likely to be minimal and sporadic.

4.2.2 Consequences

4.2.2.1 Proposed Action

Fort Campbell Property

Long-term moderate effects may be anticipated with the proposed expansion of the landfill. The proposed addition of landfill operations to the 358-acre tract of land would increase potential air emissions due to landfill gas production. Bi-County utilizes flaring to mitigate methane gas emissions at the closed Class I facility and at this time there is a feasibility study to implement a gas-to-energy program at the landfill. There are currently no air permitted sources on the 358-acre property, and the proposed landfill expansion should not result in the addition of new Class I processing buildings or activities. Title V permitting will be required with additional Class I air space. Fugitive emissions associated with construction activities and truck traffic will be sources of air emissions from this proposed action.

Construction of the landfill, including development of haul roads and clearing of the landfill footprint, will likely generate fugitive dust emissions. Fugitive dust is regulated by the Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 (2) (j), which specifies requirements for fugitive dust control at the site. During construction activities or daily operations, fugitive dust emissions can be minimized by the use of wet suppression and other approved control techniques. Such techniques can also be used to minimize fugitive dust generation after the landfill expansion becomes operational. Current Bi-County Landfill operating procedures include the use of wet suppression to reduce fugitive emissions. By implementing existing practices at the new expansion facility, fugitive dust should not present an air quality problem.

Additional activities potentially undertaken at the new landfill area could include open burning to clear land and controlled burning to maintain fire protection breaks on the property. Limited burning of wood waste may also be performed at the landfill. Tennessee Air Pollution Control Regulations (TAPCR) set forth specific requirements for open burning and specifies the need for permits prior to burning activities, based upon the material to be burned. Compliance with applicable open burning requirements should minimize air quality impacts associated with such activities.

The operation of the landfill also presents the potential for emissions of organic compounds — primarily methane — and carbon dioxide associated with the decomposition of the waste that will eventually be placed in the landfill. The landfill will operate as a typical municipal landfill, and would be expected to have emissions usually associated with same. These emissions would need to be monitored in accordance with current Tennessee Solid Waste Processing

Rule 1200-1-7-.04 (5) (a). Appropriate permitting and operation of the landfill would be necessary and expected to occur based on the existing Bi-County Landfill operations. Air quality is not expected to be compromised by the expansion of the municipal landfill.

The design or permitting of the landfill expansion has not been performed, but the anticipated design/permitted capacity of the landfill will likely be above applicable thresholds for which New Source Performance Standards (NSPS) and Maximum Achievable Control Technology Standards (MACT) will apply. The NSPS and MACT standards apply to landfills with a capacity greater than 2.5 million Mega grams and 2.5 million cubic meters (volume), and require additional air pollution control methods. If, during design, it appears as though the capacity will exceed this threshold, Bi-County would be required to address the aforementioned MACT and NSPS requirements.

Trigg County Property

The proposed transfer of property in Trigg County, Kentucky, and Stewart County, Tennessee, to Fort Campbell will have long-term beneficial effects on air quality. Based on information provided by Fort Campbell, the area is proposed for use as training ground for military personnel. There are currently no plans for new buildings on the property and only normal vehicle traffic to transport personnel onsite is anticipated. There are no air permitted sources on the property and the proposed land transfer will not result in the addition of any requiring an air permit. The property will fall under the Fort Campbell Title V permit and Integrated Natural Resources Plan (INRMP) and the management actions chosen for the property.

In the future, if there are proposed increases to Fort Campbell operations at this location, Fort Campbell will evaluate air permitting requirements and/or necessary emission control options for such activities/sources.

4.2.2.2 No Action Alternative

Fort Campbell Property

No adverse effects or changes to ambient air quality would be expected in a no action alternative.

Trigg County Property

Short-term and long-term adverse effects may be anticipated on the ambient air. The property is not likely to be utilized by Bi-County, thus the property would most likely be sold and/or revenue producing alternatives would be explored.

4.3 Noise

4.3.1 Affected Environment

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974, USEPA provided information on negative effects of noise; identifying indoor and outdoor noise limits that protect public health and welfare (e.g., prevent hearing damage, sleep disturbance, and communication disruption). These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Noise levels below 65 decibels (dB) are considered to be normally acceptable in suitable living environments (USMA, 1996).

The Army has recognized its potential for noise impact on communities adjacent to its installations and has implemented an Environmental Noise Management Program (ENMP), formerly known as the Installation Compatible Use Zone (ICUZ) Program. Under the program, Fort Campbell mapped ICUZ noise zones that depict the relationship between noise levels and land use. ICUZ noise zones are defined as follows:

Zone I — An area where the sound is less than 65 dB, A-weighted (ADNL), or 62 dB, C-weighted (CDNL). This area, considered to have moderate to minimal noise exposure, is acceptable for noise-sensitive land uses.

Zone II — An area where the sound level is 65 to 75 dB (ADNL) or 62 to 70 dB (CDNL). This area is considered to have significant noise exposure and is "normally unacceptable" for noise-sensitive land uses.

Zone III — An area where the sound level is greater than 75 dB (ADNL) or 70 dB (CDNL). This zone is considered an area of severe noise exposure and is unacceptable for noise-sensitive activities.

<u>Fort Campbell Property</u>

According to the Fort Campbell INRMP and Figure 3-1, noise modeling for activities located near the Bi-County Landfill indicates that the existing landfill location is in Noise Zone I. However, if Bi-County acquires the adjacent Fort Campbell property, Bi-County would be located in or near Noise Zone II and be exposed to an increase in noise from military activities.

Trigg County Property

The Trigg County property is currently uninhabited with only general environmental ambient noise generated at the site. The Trigg County property is located adjacent to the Fort Campbell Military Reservation and according to the noise contours depicted on Figure 3-1 of the INRMP (May 1999), the Trigg County property is located near Noise Zones I and II. During the scoping process, Fort Campbell has stated that land use on the Trigg County property will be restricted to light vehicle and personnel activity. According to the EA conducted in 2000, helicopter corridors run primarily along the perimeter of the installation, as part of the military operations conducted principally by the 101st Airborne Division.

4.3.2 Consequences

4.3.2.1 Proposed Action

Fort Campbell Property

Landfill expansion will occur north and west of the current landfill where the area is undeveloped and non-residential. The expansion area will be more isolated from area residential or commercial property use. A noise contour map showing the location of the Bi-County Landfill in relation to the estimated noise contours generated by Fort Campbell is located in Figure 7-1, Appendix A. The construction on the site will increase the noise levels on Bi-County Landfill and on Fort Campbell. Long-term moderate effects of the proposed action may be anticipated due to landfill construction activities.

Long-term beneficial effects could also be expected as a result of implementing the proposed action. Due to vegetative buffers located along the perimeter of the property, noise from the landfill is mitigated. Residents located near the landfill would be further removed from the landfill cells. No adverse offsite noise effects would be expected.

Trigg County Property

Long-term moderate adverse and long-term beneficial effects would be expected as a result of the proposed action. According to the INRMP (May 1999), Fort Campbell has received noise complaints due to certain military activities, specifically helicopter flyovers. Although the perimeter of the base will be closer to the residential properties in the Pugh Flat community, the frequency of helicopter flights is not expected to increase, but training maneuvers on the property are to be expected. Fort Campbell will leave a buffer of vegetation along the perimeter of the property and will follow the management recommendations of the Installation Compatible Use Zone (ICUZ) Program (INRMP). Figure 7-2, Appendix A depicts the noise contours relative to the Trigg County property.

4.3.2.2 No Action Alternative

Fort Campbell Property

No adverse effects are expected if the proposed action is not implemented.

Trigg County Property

Short-term and long-term adverse effects may be anticipated. The property is not likely to be utilized by Bi-County, thus the property would most likely be sold and/or revenue producing alternatives would be explored. If construction or other noise producing activities take place on the property there is potential for the noise to increase.

4.4 Topography, Geology, and Soils

4.4.1 Affected Environment

Topography

Fort Campbell Property

Topography of the Fort Campbell property is predominantly sloping (to the north) with two broad ridges cut by smaller unnamed, intermittent tributaries of Fletcher's Fork Creek. The surrounding area is typified by gently rolling terrain. The predominant geomorphic feature in the area is the dendritic drainage system associated with limestone-dominant terrain. Elevations in the footprint range from approximately 565 feet mean sea level (msl) to approximately 630 feet msl. Slopes in the area generally range from 2% to as great as 12% within the small intermittent stream valleys, causing steep sides within valleys. Figure 2 shows the topographic relief of the 358-acre area north of the Bi-County Landfill. Steep areas are marked by contour lines that are closer together, and where areas are gently sloping, contour lines are farther apart.

Trigg County Property

Topography within the 670-acre Trigg County property is predominantly rolling with a steep ridge oriented generally north-south through the property. The tract is covered with hardwood/pine timber. On the northeast portion of the tract there is approximately five acres of pasture. Two unnamed tributaries to Scott Branch cut through the property. Additionally, one unnamed tributary to Saline Creek, which enters Scott Branch, is located in the southern portion of the property. To the west lies the Scott Creek floodplain, a relatively flat land feature in which there are approximately 10 acres of level Class 2 land suitable for row crops. Surrounding the property on the remaining sides is hilly terrain. A TVA power line easement bisects the western portion of the tract. The predominant geomorphic feature in the area is the dendritic drainage system associated with limestone-dominant terrain. Elevations in the footprint range from approximately 460 feet msl to approximately 676 feet msl. Slopes in the area generally range from 10% to as

great as 60% within the small intermittent stream valleys; causing the slopes immediately surrounding the unnamed tributaries to be noticeably steep on both sides of their valleys. Figure 3 shows the topographic relief of the Trigg County property.

Geology

Fort Campbell Property

The Fort Campbell property is situated near the boundary of the Lexington Plain of southwestern Kentucky and the Highland Rim Plateau of northwestern Tennessee. This area is in the western Highland Rim, which surrounds the Pennyroyal Plateau. The bedrock dips uniformly and gently to the north-northeast at a slope of approximately 15 feet per mile. The uppermost formation underlying the Fort Campbell property is the St. Louis Limestone. Beneath the St. Louis are the older Warsaw Limestone, Fort Payne Formation, and Chattanooga Shale. These rock formations average a total thickness of approximately 550 feet and are characterized by, and consist primarily of, limestone that is fine- to very coarsely crystalline, medium to thick bedded, fossil-fragmental, partly crystalline, and commonly silty with local oolitic, dolomitic, argillaceous, or silicious zones.

Beneath the Fort Campbell property the residuum derived from the parent rock is a deep colluvium, exhibiting considerable thickness (40 to 60 feet). The soils are predominantly Dickson silt loams with a lesser development of Mountview silt loams on the steeper slopes as defined by the U.S. Department of Agriculture (USDA) Soil Conservation Service. Both types of soils have an approximate two- to three-foot deposit of loess above the residuum soils. The loess, underlain by residuum, consists of red clay with a high plasticity and lesser amounts of silt, fine chert, and limestone fragments. In many cases, permeability is moderate to moderately slow in the soils.

Trigg County Property

The Trigg County property is located in the Cumberland-Tennessee Rivers Physiographic Area, specifically, the Western Pennyroyal area. The bedrock dips uniformly and gently to the north-northeast at a slope of approximately 15 feet per mile. Side slopes in the area are long and steep or moderately steep. The ridge tops and bottoms generally are narrow. There are sinkholes and springs characteristic of karst topography in the area.

The uppermost bedrock formation underlying the Trigg County property is the Upper Cretaceous Tuscaloosa Formation. The Tuscaloosa Formation forms the rock on all ridge tops and uplands in the area. Beneath the Tuscaloosa are the Mississippian St. Genevieve Limestone, St. Louis and Salem Limestone, and older Warsaw Limestone. These rock formations average a total thickness of upwards of 580 feet. The Tuscaloosa Formation is characterized by gravel, sand, silt, and clay.

This material is cemented and acts as a conglomerate in many locales. The St. Genevieve, St. Louis and Salem, and Warsaw Limestone are characterized by, and consist primarily of, limestone that is fine- to very coarsely crystalline, medium to thick bedded, fossil-fragmental, partly crystalline, and commonly silty with local oolitic, dolomitic, argillaceous, or siliceous zones. In stream valleys, Quaternary-age alluvium mantles the soil. This alluvium consists of gravel, sand, silt, and clay derived from underlying formations, especially the Tuscaloosa, with the silt being derived from loess and underlying Mississippian-aged limestone.

This limestone mantle beneath the Trigg County property is overlain by a thick overburden consisting of loess and residual soil developed in place by weathering of the cherty limestone parent material. The loess can comprise up to four feet of the soil column in the area. The loess is underlain by residuum consisting of red clay with a high plasticity and lesser amounts of silt, fine chert, and limestone fragments. In many cases, permeability is moderate to moderately slow in the soils. Depth to bedrock in the area is typically greater than five feet below ground surface.

Soils

Fort Campbell Property

Based on a review of the Soil Survey of Montgomery County, seven soil mapping units occur on the Fort Campbell property. Some variations in series names, mapping units and boundaries occur across the county/state boundary between Kentucky and Montgomery County, Tennessee. The soils data were collected in 1975 and are referenced in the Soil Survey of Montgomery County, Tennessee, prepared by the USDA Soil Conservation Service. Figure 6-1 was generated using the Montgomery County Tennessee Soil Survey map and depicts the soils located within the footprint of the acquisition property. The descriptions here provide a good general characterization of soil conditions on the Fort Campbell property located adjacent to the Bi-County Landfill.

Table 2 lists the seven major soil mapping units found in the footprint and provides general characteristics of the soil series or soil complexes. Drainage characteristics, textural characteristics, landscape position, and some potential limitations associated with the mapping units are provided. None of the dominate soils occurring in the footprint are designated as hydric, or soils that are saturated long enough to experience oxygen-deficient conditions. However, two less common soils, the Lindside Silt Loam and the Newark Silt Loam are hydric soils that occur within the unnamed intermittent tributaries to Fletcher's Fork Creek that drain the area.

Table 2
General Characteristics of Soil Series — Fort Campbell Property

Soil Type	Occurrence in Footprint Ranking	Texture Parent Material	Drainage Class	Limitations	Prime Farmland	Landscape Position
Dickson Silt Loam (DsB), 1% to 4% slopes	1	Surface: SiL Subsoil: SiL-SICL	moderately well-drained	wetness erodability	Yes	uplands and low terraces
Pickwick Silt Loam (PkC), 5% to 12% slopes	2	Surface: SiL Subsoil: SiCL	well-drained	slope erosion clayey	No	Uplands
Lindside Silt Loam (Ld)	3	Silt loam	moderately well to well-drained	flooding hydric	Yes	first bottoms, depressions
Pickwick Silt Loam (PkC2), 5% to 12% slopes, eroded	4	Surface: SiL Subsoil: SiCL	well-drained	slope erosion clayey	No	uplands
Newark Silt Loam (Ne)	5	Surface: SiL Subsoil: SiCL	poorly drained	flooding hydric	No	bottoms, depressions
Mountview Silt Loam (MoC), 5% to 15% slopes	6	Surface: SiL Subsoil: CSiCL	well-drained	erosion	No	uplands
Baxter Cherty Silty Clay Loam (BcC2), 5% to 12% slopes, eroded	7	Cherty silty clay loam	well-drained	slope steepness, droughtiness	No	slopes on uplands

Notes:
SiC — silty clay
SiCL — silty clay loam
CSiCL — Cherty silty clay loam

Trigg County Property

Based on review of the Soil Survey of Lyon and Trigg Counties, Kentucky, 11 soil mapping units occur on the subject property, with two of these covering approximately 560 acres within the footprint. The soils data were collected in the period from 1972 to 1978 and are referenced in the soil survey, published in 1981, prepared by the USDA Soil Conservation Service. Figure 6-2 was generated using the Trigg County Kentucky, and Stewart County Soil Survey maps and depicts the soils located within the footprint of the property. The descriptions here provide a good general characterization of soil conditions on the property.

Table 3 lists the 11 major soil mapping units found in the footprint and provides general characteristics of the soil series or soil complexes. Drainage characteristics, textural characteristics, landscape position, and some potential limitations associated with the mapping units are provided. None of the dominate soils occurring in the footprint are designated as hydric, or soils that are saturated long enough to experience oxygen-deficient conditions.

Table 3
General Characteristics of Soil Series — Trigg and Stewart County Properties

Soil Type	Occurrence in Footprint Ranking	Texture/ Parent Material	Drainage Class	Limitations	Prime Farmland	Landscape Position
Baxter-Hammock Complex (BaE), 20% to 30% slopes	1	Surface: SiL Subsoil: SiCL	well-drained	steep slopes erodability	No	uplands and slopes
Brandon Silt Loam (BrC), 6% to 12% slopes	2	Surface: SiL Subsoil: SiL	well-drained	Slope steepness clayey	yes	uplands and side slopes
Brandon-Saffell Complex, (BxE), 20% to 50% slopes	3	Surface: SiL Subsoil: SiL	well-drained	steep slopes severe erosion hazard	no	slopes
Hammack-Baxter Complex (HxC) 6-12% slopes	4	Surface: SiL Subsoil: SiCL	well-drained	slope erosion clayey	yes	uplands
Nolin Silt Loam (No)	5	Surface: SiL Subsoil: SiCL	poorly drained	flooding hydric	yes	bottoms, depressions
Baxter–Hammack Complex (BaF), 30% to 60% slopes	6	Surface: CSiL Subsoil: CSiC/C	well-drained	steep slopes, erosion	no	slopes
Lax Silt Loam (LbB), 2% to 6% slopes	7	Surface: SiL Subsoil: GSiL	mod. well-drained	erosion	yes	ridgetops above 570 feet msl.
Brandon Silty Clay Loam (BsD3), 12% to 25% slopes, severely eroded	8	Surface: SiCL Subsoil: GSiCL/CL	well-drained	steep slopes, erosion	no	steep slopes
Lax Silt Loam (LbC), 6% to 12% slopes	9	Surface: SiL Subsoil: GSiL	mod. well-drained	erosion	yes	side slopes above 570 feet msl.
Brandon Silt Loam (BrD), 12% to 20% slopes	10	Surface: SiL Subsoil: GSiCL/CL	well-drained	steep slopes erosion	no	steep slopes
Clifty Gravelly Silt Loam (Cp)	11	Surface: GSiL Subsoil: GSiL	well-drained	flooding	no	bottoms of creeks

Notes:
C – Clay
SiC – silty clay
CL – Clay loam
SiCL – silty clay loam
CSiCL – Cherty silty clay loam
GSiL – Gravelly silty loam
GSiCL – Gravelly silty clay loam

Prime Farmland

Fort Campbell Property

Prime farmland soils are protected under the Farmland Protection Policy Act (FPPA) of 1981. The intent of the act is to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland soils to nonagricultural uses. The act also ensures that federal programs are administered in a manner that, to the extent practical, will be compatible with private, state, and local government programs and policies to protect farmland. The Natural Resources Conservation Service (NRCS) is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the act (see Title 7 of the CFR, Part 658, revised January 1, 1998).

Through document information and field observation it was determined that approximately 20% of the land may be prime farmland soils. The area is currently covered in medium-growth woodland. Certain areas of the property that include a portion of these soils will not be developed. Therefore, a farmland Conversion Impact Rating (Form AD-1006) of the project area is not warranted and no further action is required under the FPPA.

Trigg County Property

Prime farmland soils are protected under the FPPA of 1981. The intent of the act is to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland soils to nonagricultural uses. The act also ensures that federal programs are administered in a manner that, to the extent practical, will be compatible with private, state, and local government programs and policies to protect farmland. The NRCS is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the act (see Title 7 of the CFR, Part 658, revised January 1, 1998).

Through soils documentation it was determined that the land had fair to poor soils for crop growth. The area is currently covered in scrubby hardwoods, briars, and early to mid-successional growth.

4.4.2 Consequences

4.4.2.1 Proposed Action

Topography

Fort Campbell Property

Long-term adverse effects will be expected on the topography of the portion of the property (central and eastern portions) that is designated for expansion of the landfill. As landfill cells are created, modification of the existing topography will occur. Waste disposal practices will cause

mounding and creation of hills and slopes over the area slated for expansion of the landfill. Additionally, soil borrow areas and sediment control structures (western and northwestern portions) will lead to depressions, which will affect the original topography of the site. Required buffer areas will limit activities and disturbances to topography at the property boundary and other sensitive areas.

Long-term beneficial effects are anticipated because the use of the current landfill will prevent the need for relocation and the possible adverse effects to an area that currently has no topographic disturbances.

Trigg County Property

The proposed action will have long-term beneficial effects to the topography of the Trigg County property. The property will remain undeveloped and will retain its forested characteristics and it will be protected under state and federal regulations when it falls under federal ownership.

Geology

Fort Campbell Property

No effects are expected on the property. The existing landfill's operations meet or exceed Subtitle D regulations, which include a flexible membrane liner and a leachate collection system. Groundwater monitoring wells are required to be installed and utilized to monitor any influence to the general geology (hydrogeology) of the proposed landfill area. Landfill cells are not excavated into the bedrock and there is sufficient soil cover above the bedrock. Bi-County will utilize similar construction and monitoring techniques in the expansion area, rendering no adverse effect to the geology of the area.

Trigg County Property

There will be long-term beneficial effects to the geology of the property as the property will fall under federal ownership and will remain undeveloped.

Soils

Fort Campbell Property

Long-term adverse effects are expected on soils on the property. Soil characteristics will change with the construction of landfill cells and other support items such as access roads, soil borrow areas and ponds over the expansion property. These components will influence and affect the original soils onsite. Original soils will be used as borrow material for daily cover and will be used in constructing the landfill cells.

Increased runoff and erosion would likely occur during site construction due to removal of vegetation, exposure of soil, and increased susceptibility to wind and water erosion. However, these effects will be minimized by the use of appropriate best management practices (BMPs) for controlling runoff, erosion, and sedimentation. Adherence to the Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 will be standard. Recommended BMPs to reduce soil erosion and sedimentation include, but are not limited to silt fences, straw bale dikes, diversion ditches, detention ponds, riprap channels, water bars, and water spreaders. A Storm Water Pollution Prevention Plan (SWPPP) would be required and prepared in accordance with USEPA National Pollutant Discharge Elimination System (NPDES) regulations to provide erosion and sedimentation prevention guidelines. In accordance with USEPA requirements, the SWPPP would describe the use of and implementation procedures for the suggested BMPs. Short-term moderate adverse effects on soils would be limited to those areas where construction of landfill cell(s) and borrow areas are proposed.

The long-term adverse effects to soils would be reduced after construction of the landfill cells and borrow areas. Decreases in soil erosion from storm water runoff could be expected through proper construction of storm water management structures. Although impervious areas could increase with the proposed action, water flowing from those surfaces would be channeled to the newly created storm water structures to prevent flooding and erosion.

Trigg County Property

Short-term minor adverse and long-term beneficial effects are expected on site soils during training periods. It is expected that only sporadic vehicular traffic would occur during military training exercises on the property. Foot traffic across the property is very likely for conducting military maneuvers. Foot traffic would create only minimal effects on site soils. Fort Campbell will implement BMPs developed for the installation found in the INRMP to alleviate soil erosion on the property. Mitigation measures will include surveys along waterways and areas where erosion is generally observed after major storm events and monitoring of training areas and foxhole areas for excessive soils erosion.

Prime Farmland

Fort Campbell Property

No adverse effects would be expected by the proposed action. According to soils documentation and field observation, only approximately 20 percent of land is considered potential prime farmland. The property is forested and currently not used for agricultural purposes.

Trigg County Property

The proposed action will have no adverse effect. The property is currently in earlier to mid-successional growth and the soil was determined fair to poor for agricultural purposes.

4.4.2.2 No Action Alternative

Fort Campbell Property

No adverse effects on geologic, topographic conditions, soils, and prime farmland would be anticipated.

Trigg County Property

Short-term and long-term adverse effects may be anticipated on geologic, topographic, soil conditions, and prime farmland. The heavily wooded property is not likely to be utilized by Bi-County, thus the property would most likely be sold and/or revenue-producing alternatives would be explored. No adverse effects to prime farmland are expected.

4.5 Water Resources

4.5.1 Affected Environment

Surface Waters

Fort Campbell Property

The surface water system of the subject property is comprised of several intermittent streams, totaling 1.54 stream miles, and no mapped lakes or impoundments. The subject property is drained and divided by five unnamed, intermittent tributaries to Fletcher's Fork Creek. The Fletcher's Fork Creek watershed drains to the West Fork Creek, which then drains to the Cumberland River, which flows approximately nine miles south of the subject property. Drainage from the Cumberland River watershed flows into the Ohio and Mississippi Rivers and ultimately flows into the Gulf of Mexico.

Trigg County Property

The surface water system of the subject property is comprised of several intermittent steams, totaling 0.3 stream miles, and no mapped lakes or impoundments. The subject property is drained and divided by four (4) unnamed, intermittent tributaries to Scott Branch. Scott Branch, located on the western boundary, flows to Saline Creek, which runs south of the property. An additional intermittent, unnamed tributary is present in the southern portion of the property. This tributary drains to Saline Creek, which then flows west to the Cumberland River. The Cumberland River flows approximately seven miles west of the subject property. Drainage from the Cumberland River

watershed flows into the Ohio and Mississippi Rivers and ultimately flows into the Gulf of Mexico.

Groundwater

Fort Campbell Property

Groundwater occurs within the soil interval at the site, typically 44 to 59 feet below ground surface. Groundwater was encountered within gravel beds and gravelly clays within the soil. Groundwater monitoring at the existing Bi-County Landfill indicates that the uppermost aquifer flows in a northeasterly direction, generally corresponding to surface topography. Groundwater flow is through interconnected pores within the soil matrix. It is likely groundwater flow direction is similar beneath the subject area. It is likely that the soil in this area is generally suitable for development of a municipal solid waste landfill.

Groundwater also occurs in bedrock in the area. It is reported that one deep aquifer system and one shallow semi-confined aquifer system within the St. Genevieve and St. Louis Limestone underlie the Fort Campbell area. The deeper aquifer is associated with Boiling, Quarles, and Blue Springs. Typically, these zones are within the upper 150 feet of bedrock (USACE, 2001; Tetra Tech, Inc., 1999).

According to the Environmental Database Report (EDR), seven federal observation wells were identified within a mile radius of the subject property. Four wells are located southeast and southwest of the landfill along 101st Airborne Road. One well is south of 101st Airborne Division Road and the remaining two wells are northeast of the subject property. The depth of the wells are reported to be between 44.50 to 191 feet below ground surface. The water level is reported approximately 20 to 20.50 feet below ground surface.

The existing Bi-County Landfill operations meet or exceed the Subtitle D regulations, which include a flexible membrane liner and a leachate collection system.

Trigg County Property

Groundwater is expected to occur within the soil interval and the Tuscaloosa Formation in low quantities. Groundwater for domestic use can be obtained from the limestone (St. Louis and Salem Limestone) and in the alluvial gravels within the stream beds in the area. Several springs were identified during field observations associated with the alluvial streams at the site, down slope from the upper reaches of the streams. Additionally, two cisterns were observed near former homesteads located at the north and south ends of the subject property. According to the EDR two wells are located within the footprint of the property. A residential well is located at the northwest portion of the property and is approximately 80 feet deep. An additional well is located at the

west/northwest portion of the property and has a reported depth of 170 feet.

Groundwater flow in the western portion of the property is expected to be to the west. Groundwater flow in the eastern half of the property is expected to be to the east-southeast.

Flood Plains and Wetlands

Fort Campbell Property

Floodplain areas occur in low-lying areas along Fletchers Fork Creek at the northern boundary of the subject area. This floodplain is not well developed as Fletcher's Fork Creek is a small stream. According to FEMA Map #470136 0080, dated June 15, 1984, the property is located in Flood Zone C, which is not in a flood hazard area. Five unnamed, intermittent tributaries that flow into Fletchers Fork Creek are located on the subject property. High-water periods in this area generally occur from December to April, and gradually recede to the low water period, August through October. Stream flow increases during rainfall events, but flooding is not considered to be a problem. Ponding may occur after particularly heavy rainfall in areas near Fletchers Fork Creek.

The U.S. Congress enacted the Clean Water Act in 1972 to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 404 of the Clean Water Act delegates jurisdictional authority over wetlands to the Corps of Engineers and the USEPA. Water of the United States protected by the Clean Water Act includes rivers, streams, estuaries, and most ponds, lakes, and wetlands. The Corps and the USEPA jointly define wetlands as "… areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (USACE, 1997). Wetland vegetation was observed during a field survey conducted in March 2004 by EnSafe at three locations. Each of the three areas observed to contain wetland vegetation appeared to be small, isolated areas approximately one-half to one acre in size and were associated with a stream system.

Wetland characterizations on Fort Campbell property are based on the U.S. Federal Wildlife Service (USFWS) National Wetland Inventory (NWI) data. The NWI database uses aerial photogrammatic techniques to determine approximate wetland boundaries on large-scale topographic maps. The data are transcribed and presented on 1 to 24,000-scale topographic maps. Because of photo-interpretation problems, map scale, and lack of ground truthing, NWI maps can be inaccurate by depicting non-wetlands as wetlands or can completely miss wetlands altogether.

Because of this potential misinformation, jurisdictional boundary determinations should be made before any land disturbances or activities that could adversely affect wetlands take place (INRMP 1999). Prior to development of the property by Bi-County Tennessee Solid Waste Processing and Disposal, rules 1200-1-7-.04 (2) (p) require wetland determination/management.

Trigg County Property

Floodplain areas for 100-year floods occur in low-lying areas along Scott Branch at the western boundary of the property. Four unnamed, intermittent tributaries and wet weather conveyances flow to Scott Branch Creek and Saline Creek. High-water periods in this area generally occur from December to April, and gradually recede to the low water period, August through October. Stream flow increases during rainfall events. Ponding may occur after particularly heavy rainfall in areas near Scott Branch Creek.

No development is currently planned at the Trigg County property. If development of roads or other infrastructure occurs on this property, the U.S. Army Corps of Engineers would need to determine what portion of the property may be considered wetlands.

4.5.2 Consequences

4.5.2.1 Proposed Action

Surface Waters

Fort Campbell Property

Short-term moderate adverse effects and long-term minor adverse effects would be expected, but adherence to Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 will assist in mitigating adverse effects. Construction activities may increase erosion and may increase dissolved solid and sediment content in water. A state NPDES permit for storm water discharge is required for Bi-County Solid Waste Landfill. BMPs to control surface erosion and runoff must be followed to minimize adverse effects on water quality. Examples of BMPs include silt fencing and hay bales to trap waterborne sediments and minimize erosion, and eventually reseeding and revegetation following construction to minimize waterborne sediment. BMPs for sediment and erosion control are prescribed by Tennessee regulations and should be followed during and after new construction.

Increased waterborne pollutants (e.g., dissolved solids, sediment) in surface water bodies resulting from construction activities, and from increased impervious surfaces following construction, could easily be transported into the groundwater system. Following the protocols outlined in the Bi-County SWPPP, state sediment and erosion control guidelines, and the installation spill prevention plan would minimize potential effects.

The long-term minor adverse effects to surface waters would be reduced after construction of the landfill cells and borrow areas. Decreases in soil erosion from storm water runoff could be expected through proper construction of storm water management structures (i.e. detention and retention ponds). Although impervious areas could increase with the proposed action, water flowing from those surfaces would be routed to the newly created storm water structures to prevent flooding and erosion. In addition, the expansion of the landfill will allow for the construction of sediment control structures that currently cannot be developed because of limited space. No long-term adverse effects are anticipated.

Trigg County Property

Short-term intermittent minor adverse effects and long-term beneficial effects would be expected. In the short term, no construction activities are planned for infrastructure improvements. Only limited vehicular traffic and foot traffic are planned for the property, therefore very minor effects to the property are foreseen.

Groundwater

Fort Campbell Property

Short-term intermittent minor adverse effects and long-term negligible adverse effects would be expected for groundwater resources. The Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 (4) specifically address leachate migration control standards, geologic buffers, composite liner, leachate collection, and final cover. Tennessee Rule 1200-1-7-.04 (7) addresses groundwater protection and monitoring standards to be met for design/operation of a Class I disposal facility. Bi-County is required to meet these standards associated with the current landfill operations and would be required to meet the standards for expansion of the Class I facility.

Trigg County Property

Short-term intermittent minor adverse effects and long-term beneficial effects would be expected for groundwater resources. Fort Campbell will adhere to BMPs established for the installation found in the INRMP. The installation staff will conduct intensive water-quality monitoring along all streams flowing through impact zones, develop a list of wells or springs to be quarantined if spills occur in karst areas, and continue to develop the inventory and characterizations of karst conditions and groundwater flow characteristics (INRMP).

Karst topography is extremely susceptible to groundwater contamination. Increased waterborne pollutants (e.g., dissolved solids, sediment) in surface water bodies resulting from construction and deconstruction activities, and from increased impervious surfaces following construction, could

easily be transported into the groundwater system. Following the protocols outlined in the SWPPP, state sediment and erosion control guidelines, and the installation spill prevention plan would minimize potential effects.

Floodplains and Wetlands

Floodplains and wetlands are of critical importance to the protection and maintenance of living resources, since they provide essential breeding, spawning, nesting, and wintering habitats for many fish and wildlife species. Wetlands also enhance the quality of surface waters by impeding erosive forces of moving water and trapping waterborne sediment and associated pollutants, maintaining base flow to surface waters through the gradual release of stored floodwaters and groundwater, and providing a natural means of flood control and storm damage protection through the absorption and storage of water during high-runoff periods.

Fort Campbell Property

Short-term intermittent minor adverse effects to wetlands may be expected. As the landfill is developed, potential (isolated and jurisdictional) wetlands may be impacted. No impacts to floodplains would be expected. The Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 specifically address leachate migration control standards, geologic buffers, composite liner, leachate collection, and final cover. The entire 100-year floodplain area is outside the footprint of construction. A 200-foot buffer area surrounding all intermittent and perennial streams will be in place to prohibit construction near these streams. Impacts to wetlands outside of buffer areas will be permitted and mitigated in accordance with Federal and state regulations.

Trigg County Property

When the Trigg County property is transferred to Fort Campbell, wetlands and floodplains will be protected and managed in accordance with Department of Defense (DoD) natural resources policy, which states that wetlands will be protected to the extent possible. All activities that affect wetlands require an environmental analysis in accordance with AR 200-1, AR 200-2, and applicable federal and state laws and regulations. USACE permits are required under Section 10 of the Rivers and Harbors Act of 1899 prior to commencing any work or building any structures in a navigable water of the United States. Also, USACE permits are required under Section 404 of the Clean Water Act for the discharge of dredge or fill material into waters of the United States, including wetlands. The regulations established at 33 *CFR* Parts 320-330 prescribe the statutory authorities and general and special policies and procedures applicable to the review of applications for U.S Army Corps of Engineer (USACE) permits. Before commencing any new work in waters of

the United States, the USACE must be contacted and a permit obtained, as appropriate (HQDA, 1995b). Long-term beneficial effects are anticipated.

4.5.2.2 No Action Alternative

Fort Campbell Property

If the no action alternative is implemented, there will be no adverse effects to wetlands or floodplains on the property.

Trigg County Property

If the no action alternative is implemented, the property will likely be sold to a private entity and it will not benefit from Federal and state mandated regulations and protection. Therefore short-term and long-term adverse effects should be anticipated.

4.6 Biological Resources

4.6.1 Affected Environment

Flora

Fort Campbell Property

Vegetation on the Fort Campbell property includes a variety of forest community types. The species found on the property are indicative of some of the 92 species observed on the installation during surveys. Some of the species are indicative of species found in the Western Mesophytic Forest Region. Before the government acquired the land that eventually became Fort Campbell in 1941, the majority of the property was cleared for agricultural use. Since that time the property has become overgrown with mostly bottomland hardwood species and pines. The species identified on the property were the red maple *Acer rubrum*, sugar maple *Acer saccharum*, river birch *Betula negra*, black gum *Nyssa sylvatica*, sycamore *Platanus occidentalis*, white oak *Quercus alba*, sassafras *Sassafras albidum*, American elm *Ulmus americana*, loblolly pine *Pinus taeda*, and shortleaf pine *Pinus echinata* (ESMP, EA 2001).

Trigg County Property

The vegetation observed on the Trigg County property typically mirrors that of vegetation on the Fort Campbell property. A similar composition of upland and bottomland hardwood species, such as the red maple *Acer rubrum*, sugar maple *Acer saccharum*, river birch *Betula negra*, black gum *Nyssa sylvatica*, sycamore *Platanus occidentalis*, white oak *Quercus alba*, sassafras *Sassafras albidum*, American elm *Ulmus americana*, loblolly pine *Pinus taeda*, and shortleaf pine *Pinus echinata*.

Clearings that were agricultural land are found in the bottomland area of Scott Branch and the northeast area of the property. There are a few smaller clearings with a mix of cedar trees, grass, and bedrock outcrops throughout the property.

Fauna

Fort Campbell Property

The 358-acres of undeveloped land provides good habitat for wildlife. Some of the common wildlife species found within the Fort Campbell property include white-tailed deer *Odocoileus virginiaus*, eastern gray squirrel *Sciurus carolinensis*, eastern cottontail rabbit *Sylvilagus floridanus*, raccoon *Procyon lotor*, striped skunk *Mephitis mephitis*, groundhog *Marmota monax*, and mourning dove *Zenaidura macroura* (Tetra Tech, EA 2003).

An ongoing analysis of the approximately 244 faunal species is taking place through the wildlife program. Baseline information on the natural resources on the Fort Campbell property is collected. The species of birds, mammals, reptiles, amphibians, fish, and invertebrates that have been identified on the property and are likely to be observed on the 358 acres are listed below.

Birds

Approximately 195 bird species have been identified through the wildlife program and the neotropical migratory bird program known as Partners In Flight. Over 100 plots have been established for bird monitoring on the Fort Campbell property. A number of the bird species included in this document are state species of concern. The American bald eagle *Haliaeetus leucocephalus* is the only federally listed species found on the property. A condensed list of the recorded bird species includes the grasshopper sparrow *Ammodramus savannarum*, Henslow's sparrow *Ammodramus henslowii*, great blue heron *Ardea herodias*, American bittern *Botaurus lentiginosus*, red-shouldered hawk *Buteo lineatus*, turkey vulture *Cathartes aura*, lark sparrow *Chondestes grammacus*, pileated woodpecker *Dryocopus pileatus*, common yellowthroat *Geothlypis trichas*, yellow-breasted chat *Icteria virens*, red-bellied woodpecker *Melanerpes carolinus*, eastern wild turkey *Meleagris gallopavo*, indigo bunting *Passerina cyanea*, and Carolina wren *Thryothorus ludovicianus* (Tetra Tech EA 2003).

Mammals

Thirty-nine species of mammals have been recorded and/or documented on the Fort Campbell property. These species include the coyote *Canis latrans*, beaver *Castor canadensis*, bobcat *Lynx rufus*, opossum *Didelphis marsupialis*, big brown bat *Eptesicus fuscus*, evening bat *Nycticeius humeralis*, hoary bat *Lasiurus cinereus*, red bat *L. borealis*, little brown bat

Myotis lucifugus, gray bat *M. grisescens*, Indiana bat *M. sodalis* eastern pipistrel bat *Pipistrellus subflavus*, rice rat *Oryzomys palustris*, pine vole *Pitymys pinetorum*, deer mouse *Peromyscus maniculatus*, white-footed mouse *P. leucopus*, golden mouse *P. natalli*, house mouse *Mus musculus*, eastern harvest mouse *Reithrodontomys humulis*, eastern mole *Scalopus aquaticus*, short-tail shrew *Blarina brevicauda*, masked shrew *Sorex cinereus*, pygmy shrew *S. hoyi*, southeastern shrew *Sorex longirostris.* eastern chipmunk *Tamias striatus*, southern bog lemming *synaptomys cooperi*, gray squirrel *Sciurus carolinensis*, fox squirrel *Sciurus niger*, southern flying squirrel *Glaucomys volans*, meadow jumping mouse *Zapus hudsonius*, eastern cottontail rabbit *Sylvilagus floridanus*, raccoon *Procyon lotor*, striped skunk *Mephitis mephitis*, groundhog *Marmota monax*, river otter *Lutra canadensis*, muskrat *Ondatra zibethica*, gray fox *Urocyon cinereoargenteus*, red fox *Vulpes fulva*, and white-tailed deer *Odocoileus virginianus* (INRMP, Tetra Tech 1999).

Reptiles and Amphibians

At least 18 reptile species and 19 amphibian species are known to occur on the Fort Campbell property. Reptiles observed on the property include the southern copperhead *Agkistrodon contortrix contortrix*, northern black racer *Coluber constrictor constrictor*, timber rattlesnake *Crotalus horridus*, northern ringneck snake *Diadophis punctatus edwardsii*, southern ringneck snake *D. punctatus punctatus*, Mississippi ringneck snake *D. punctatus stictogenys*, gray rat snake *Elaphe obsoleta spiloides*, prairie kingsnake *Lampropeltis calligaster calligaster*, black kingsnake *L. getulus nigra*, northern watersnake *Nerodia sipedon sipedon*, rough green snake *Opheodrys aestivus*, ground snake *Sonora semiannulata*, stinkpot *Sternotherus odoratus*, northern red-bellied snake *Storeria occipitomaculata occipitomaculata*, midland brown snake *S. dekayi wrightorum*, eastern box turtle *Terrepene Carolina carolina*, eastern garter snake *Thamnophis sirtalis sirtalis*, red-eared turtle *Trachemys scripta elegans*, and snapping turtle *Chelydra serpentina* (Tetra Tech May 2003).

Amphibian species include the following: Blanchard's cricket frog *Acris crepitans blanchardi*, mole salamander *Ambystoma talpoideum*, marbled salamander *A. opacum*, spotted salamander *A. maculatum*, Fowler's toad *Bufo woodhousii fowleri*, American toad *Bufo americanus americanus*, long-tail salamander *Eurycea longicauda longicauda*, northern two-lined salamander *E. bislineata bislineata*, cave salamander *E. lucifuga*, eastern narrow-mouthed toad *Gastrophryne carolinensis*, gray treefrog *Hyla chrysoscelis*, barking treefrog *H. gratiosa*, red-spotted newt *Notophthalmus viridescens viridescens*, slimy salamander *Plethodon glutinosus glutinosus*, northern spring peeper *Pseudacris crucifer crucifer*, upland chorus frog *P. feriarum*, southern

leopard frog *Rana utricularia utricularia*, bullfrog *R. catesbeiana*, and pickerel frog *R. palustris*.

Fish

Fletcher's Fork Creek is a significant stream habitat on the property. Fish species likely to inhabit this stream are the Northern hog sucker *Hypentelium nigricans*, bluegill *Lepomis macrochirus*, green sunfish *Lepomis cyanellus*, longear sunfish *Lepomis mgealotis*, redear sunfish *Lepomis microlophus*, largemouth bass *Micropterus salmoides*, and bigeye shiner *Notropis boops* (Integrated Natural Resources Management Plan, Tetra Tech, Inc. 1999).

Invertebrates

A survey of installation surface waters was conducted in 1996 (Zirkle, 1997a). Seven creeks, encompassing three watersheds, were included in the survey—Casey Creek, Dry Creek, Fletcher's Fork Creek, Jordan Creek, Piney Fork Creek, Dry Fork Creek, and Saline Creek. From the survey, which included sampling from 16 sites, macroinvertebrates from 57 families were collected. Some of the families identified from the survey are Aeshnidae, Ancylidae, Belastomatidae, Cambaridae, Chironomidae, Corixidae, Elmidae, Glossiphoniidae, Gyrinidae, Haliplidae, Leuctridae, Libellulidae, Macromiidae, Noctuidae, Oligochaeta, Perlidae, Pleidae, Polycentropodidae, Sialidae, Syphidae, Tabanidae, and Veliidae. A terrestrial invertebrate survey has not been conducted at the installation.

Trigg County Property

The 670-acre habitat in this area is favorable for most of the species that were found on the Fort Campbell Military Reservation. During at least one of the field surveys, deer and raccoon tracks were detected within the property boundary and along the boundary border near Scott Branch. Since this is private property there have been no faunal surveys conducted. When Fort Campbell acquires this property, surveys for species will ensue. With similar habitat, it is believed that most of the species found on Fort Campbell will also be found on Trigg County property. Wildlife species observed on the property include the great blue heron *Ardea herodias*, red-tailed hawk *Buteo jamaicensis*, central stoneroller *Campostoma anomalum*, turkey vulture *Cathartes aura*, American crow *Corvus brachyrhynchos*, pileated woodpecker *Dryocopus pileatus*, the red-bellied woodpecker *Melanerpes carolinus*, eastern wild turkey *Meleagris gallopavo*, indigo bunting *Passerina cyanea*, white-tailed deer *Odocoileus virginiaus*, gray squirrel *Sciurus carolinensis*, creek chub *Semotilus atromaculatus*, eastern cottontail rabbit *Sylvilagus floridanus*, Carolina wren *Thryothorus ludovicianus*, and the mourning dove *Zenaidura macroura*. The species were observed during the site visits to the property in 2004 and 2005.

Rare, Threatened, and Endangered Species — Flora

Fort Campbell Property

The Tennessee Division of Natural Heritage database was reviewed for federally endangered, threatened, proposed and candidate species by county. The occurrence of documented species identified during the literature review within a 1- to 5-mile radius of the property can be found in Table 4. There are 14 species listed for Montgomery County, Tennessee, Woodlawn quadrangle to include the Sweet Coneflower *Rudbeckia subtomentosa*, the American ginseng *Panax quinquefolius*, the Price's Potato-bean *Apios priceana*, Goldenseal *Hydrastis Canadensis*, the Michigan Lily *Lilium michiganense*, Gyandotte beauty *Synandra hispidula*, the Bearded Rattlesnake-root *Prenanthes barbata*, the Chalk maple *Acer Saccharum leucoderme*, the Compass Plant *Silphium laciniatum*, the Earleaf False-Foxglove *Agalinis auriculata*, the Southern Prairie-Dock *Silphium pinnatifidum*, the Hairy Hackweed *Hieracium longipilum*, and the Purple milkweed *Asclepias purpurascens*. Of the species listed, only *Apios priceana* and *Agalinis auriculata* are state-listed endangered.

Apios priceana is also listed as threatened by the USFWS. A letter dated June 2004 received from USFWS stated that there is potential for this species to occur on or near the subject property. The Price's Potato-bean has also been found within Trigg County.

In response to a letter from USFWS in June 2004, a third site visit was performed on July 15, 2004, by Lee Carolan and Jose Garcia of EnSafe. Approximately three (3) miles of the property in what was considered potential habitat, woodlands, and open edges were assessed during the site visit. The listed species described above were not observed during the site visits and have not been recorded on the property to date. Figure 8-1, Appendix A, depicts the location of the Bi-County property and the documented locations of rare, threatened, and endangered species.

Trigg County Property

It is evident with comparable habitat to the Fort Campbell property that the same common species would be found on this property if surveys were performed. One species that was more prevalent in Trigg County, tulip popular *Liriodendron tulipifera*, was found in the bottomland near Scott Branch. Figure 8-2, Appendix A, depicts the location of the Trigg County property and the documented locations of rare, threatened, and endangered species located on the adjacent Fort Campbell property.

The Kentucky State Nature Preserves Commission website lists the federally endangered,

threatened, proposed, and candidate species by county. There are 11 species listed for Trigg County, Kentucky, including the Skinner's false foxglove *Agalinis skinneriana*, Price's Potato-bean *Apios priceana*, the Mountain silverbell *Halesia tetraptera*, the Carolina anglepod *Matelea carolinensis*, the Three-leaf sundrops *Oenothera linifolia*, the Clustered Bluets *Oldenlandia uniflora*, the Mock Bishop's weed *Ptilimnium capillaceum*, the Grassleaf arrowhead *Sagittaria graminea*, and the Fringed nutrush *Scleria ciliata var ciliate*. According to a file review from the Kentucky State Nature Preserves Commission, the Barbed Rattlesnake-root *Prenanthes barbata* is the only federally listed species of management concern present within a 0- to 3-mile radius of the Trigg County property.

A letter dated June 2004 from the USFWS stated that Price's Potato-bean *Apios priceana* was found in Trigg County. On July 15, 2004, Ms. Carolan and Mr. Garcia performed a field search on the subject property looking for the Price's Potato-bean and/or its habitat. Approximately 2 square miles of potential habitat for this species was surveyed and it was not located at that time (Appendix C).

Thomas G. Barnes (University of Kentucky, State Extension) and Deborah White (Kentucky State Nature Preserves [KSNP]) were contacted in July 2004 to gather more information on the location of this species. At this time there are no known locations of the species on the subject property.

It is anticipated that after conveyance of the property to Fort Campbell, a complete assessment of all species and their habitats will occur. If any of the above species is located, the appropriate organizations will be contacted and provided with information on the location(s).

Table 4
Fort Campbell — Summary of Endangered/Threatened Species
Summary of Threatened, Endangered, and Deemed in Need of Management Species
Documented To Occur In Vicinity of Proposed Bi-County Landfill Project as Listed in the
Division of Natural Heritage Databases

Common Name	Scientific Name	State Status	Federal Status
0- to 1-Mile Radius, Woodlawn Quad			
Sweet coneflower	Rudebeckia subtomentosa	T	
Indiana Bat	Myotis sodalis	E	LE
American Ginseng	Panax quinquefolius	S-CE	
Price's Potato-Bean	Apios priceana	E	LT
Goldenseal	Hydrastis canadensis	S-CE	
Michigan Lily	Lilium michiganense	T	
Guyandotte Beauty	Synandra hispidula	S	
	Fort Campbell Barrens*		
	Barnet's Woods TNC Preserve, Registered*		
Mole Salamander	Ambystoma talpoideum	D	
American Bittern	Botaurus lentiginosus		
Red-Headed Woodpecker	Melanerpes erythrocephalus		
Bearded Rattlesnake-root	Prenanthes barbata	S	
Chalk Maple	Acer Saccharum leucoderme	S	
Mole Salamander	Ambystoma talpoideum	D	
Southeastern Shrew	Sorex longirostris	D	
	Foster Cave*		
1- to 3-Mile Radius , Woodlawn Quad			
Compass Plant	*Silphium laciniatum*	T	
	Hellcat Prairie Protection Planning Area*		
Mole Salamander	*Ambystoma talpoideum*	D	
Mole Salamander	*Ambystoma talpoideum*	D	
Southern Bog Lemming	*Synaptomys cooperi*	D	
Grasshopper Sparrow	*Ammodramus Savannarum*	D	
Lark Sparrow	*Chondestes grammacus*	T	
Grasshopper Sparrow	*Ammodramus Savannarum*	D	
Lark Sparrow	*Chondestes grammacus*	D	
Lark Sparrow	*Chondestes grammacus*	D	
Purple Fringeless Orchid	*Platanthera peramoena*	S	
Earleaved False-Foxglove	*Agalinis auriculata*	E	
Earleaved False-Foxglove	*Agalinis auriculata*	E	
Bearded Rattlesnake-root	*Prenanthes barbata*	S	
Earleaved False-Foxglove	*Agalinis auriculata*	E	
Earleaved False-Foxglove	*Agalinis auriculata*	E	
Earleaved False-Foxglove	*Agalinis auriculata*	E	
Bearded Rattlesnake-root	*Prenanthes barbata*	S	
Southern Prairie - Dock	*Silphium pinnatifidum*	T	
Earleaved False-Foxglove	*Agalinis auriculata*	E	
Hairy Hackweed	*Hieracium longipilum*	S	
Bearded Rattlesnake-root	*Prenanthes barbata*	S	

Table 4
Fort Campbell — Summary of Endangered/Threatened Species
Summary of Threatened, Endangered, and Deemed in Need of Management Species
Documented To Occur In Vicinity of Proposed Bi-County Landfill Project as Listed in the
Division of Natural Heritage Databases

Common Name	Scientific Name	State Status	Federal Status
Bearded Rattlesnake-root	*Prenanthes barbata*	S	
Bearded Rattlesnake-root	*Prenanthes barbata*	S	
Sweet Coneflower	*Rudbeckia subtomentosa*	T	
1-3 mile radius, Needmore Quad			
American Ginseng	*Panax quinquefolius*	S-CE	
Gray Bat	*Myotis grisescens*	E	LE
Indiana Bat	*Myotis sodalis*	E	LE
Southern Cavefish	*Typhlichthys subterraneus*	D	
Gray Bat	*Myotis grisescens*	E	LE
Indiana Bat	*Myotis sodalis*	E	LE
Eastern Small-footed myotis	*Myotis leibii*	D	
American Ginseng	*Panax quinquefolius*	S-CE	
Bellamy Cave Protection Planning Site			

Notes:
Endangered
Threatened
Deemed in Need of Management
Special Concern Species
Commercially Exploited
Listed Endangered
Listed Threatened
*Protected Areas

Rare, Threatened and Endangered Species — Fauna

Fort Campbell Property

A rare, threatened, and endangered animal species survey was conducted on the installation from July 1, 1993, through November 15, 1994 (Scott et al., 1995). Subsequent to this survey, Fort Campbell conducted two bat surveys during the summers of 1998 and 2002 that included limited cave surveys, mist netting, and radio telemetry. Four caves have been found within 5 miles of the subject properties. Results of the 1998 sampling effort identified the presence of the federally listed endangered gray bat *Myotis grisescens* (E). According to a report conducted by BHE Environmental in 2004, prior to 2002 no Indiana bat *Myotis sodalis* (E) had been identified or captured on the Base, nor have any maternity colonies been positively identified. The gray bats and Indiana bats have been captured in mist nets on the installation. More than 228 gray bats were captured on the installation. Gray bats have been caught along Saline Creek, Piney Fork Creek, Jordan Creek, Fletcher's Fork Creek, and Noah Spring Branch. According to

personal communication with Gene Zirkle, Fish and Wildlife Biologist on the installation, the gray bats have been tracked flying over 200 acres of farm property and over the Bi-County Landfill on their way to forage within the Fletcher's Fork watershed.

Thus far, three Indiana bats have been identified foraging in the riparian areas of the western portion of the installation. It is not known to what extent Indiana bats might be using forests as roosting locations (Tetra Tech, 2003). According to Fort Campbell wildlife staff, a mist netting survey was completed September 2005. This survey was to assist in determining additional locations of the bat species.

A request was made to the USFWS for an inventory of listed species occurrences in the vicinity of the proposed project and letters were received in June and July 2004. The results of the letters stated that the gray bat *Myotis grisescens* (E), Indiana bat *Myotis sodalis* (E), and Bald Eagle *Haliaeetus leucocephalus* (T) are known to occur within 1-mile and/or 5-mile zones of the proposed project and that a complete biological assessment of potential impacts that may affect these three listed species is needed (see Appendix C). There were four site visits to this property for investigation. Two visits by Jose Garcia and Joseph George of EnSafe occurred in March 2004; a third site visit was performed in July 2004 by Lee Carolan and Jose Garcia of EnSafe; and a fourth visit occurred in May 2005 by Lee Carolan and Shannon McWaters of EnSafe to determine potential habitat and/or species location. Approximately three miles along fire breaks were surveyed in what were potential habitats for the above species. None of the above species were observed within the surveyed areas.

According to Tennessee Solid Waste Regulations (1200-1-7-.04) it is mandatory that there be a 200-foot buffer zone along Fletcher's Fork Creek to protect potential foraging habitat for the bats. This buffer zone amounts to 39.5 acres. The bald eagle, gray bat, and Indiana bat are discussed in detail in the biological assessment (Appendix C).

Trigg County Property

The Kentucky State Nature Preserves Commission (KSNPC) and Kentucky Department of Fish and Wildlife Resources (KDFWR) were queried to provide a list of federally endangered, threatened, and proposed candidate species by county. The results of the literature review conducted by KSNPC can be found in Table 5, which summarizes the documented species known to occur within a 1- to 2-mile radius of the property center. There are two state-listed species with occurrences near the Trigg County, Kentucky, property. These include the northern pine snake *Pituophis melanoleucus melanoleucus*, and the Bewick's wren *Thryomanes bewickii*. The federally

listed gray bat *Myotis grisescens* (E), the Indiana bat *Myotis sodalis* (E), and the orangefoot pimpleback mussel *Plethobasus cooperianus* (E) were listed in the KSNPC and KDFWR websites as well as in the USFWS letters postmarked June and July 2004. According to the USFWS letters, the above species as well as the bald eagle *Haliaeetus leucocephalus* (T) may occur within the property. Currently, none of the above species have been observed on the subject property. The bald eagle, gray bat, Indiana bat, and orangefoot pimpleback are discussed in detail in the biological assessment (Appendix C).

In response to the letter received by USFWS, the Trigg county property was visited by Jose Garcia and Joseph George of EnSafe on two separate occasions in March 2004. Mr. Garcia and Ms. Lee Carolan conducted an additional site visit in July of 2004 and again in May 2005. The orangefoot pimpleback mussel *Plethobasus cooperianus* (E) and northern pine snake *Pituophis melanoleucus melanoleucus* are known to occur in the Johnson Hollow quadrangle, Trigg County, Kentucky, within the 1- to 5-mile radius of the center of the subject property. The orangefoot pimpleback has been documented in Saline Creek south of the subject property. A portion of Scott Branch, a tributary to Saline Creek, runs parallel to the western boundary of the subject property along Highway 139 from north to south to the Tennessee state line. The water quality of the branch was not measured; however visual observation of the Scotts Branch and the surrounding areas appeared questionable to sustain a population of this species. The Scotts Branch is bounded by agriculture land to the east and Highway 139 to the immediate west. Further west is agricultural land. During low rain and drought periods, Scott Branch dries up. The tributary was surveyed on four separate site visits and no mussels were observed in the branch however creek chubs, stone rollers, and snails were observed.

It is anticipated that before any development or use occurs on the property, a complete assessment of all species and their habitats will occur. If any previously mentioned species are located on the property, the appropriate organizations will be contacted and provided with information on their location(s).

To determine specifically if the northern pine snake exists, traps will have to be placed strategically on the property. At this time it is anticipated that before land use occurs on this property, a thorough biological investigation will take place to determine if these species or their habitats will be affected by the intended use.

Table 5
Trigg County — Summary of Endangered/Threatened Species
Draft Summary of Threatened, Endangered, and Deemed in Need of Management Species
Documented to Occur in Vicinity of Proposed Trigg County Project as Listed in the
TN Division of Natural Heritage and the KY State Nature Preserve Databases

Common Name	Scientific Name	State Status	Federal Status
0-1 Mile Radius			
No Occurrences			
1-2 Mile Radius			
Masked Shrew	*Sorex cinereus*	D	
Goldenseal	*Hydrastis canadensis*	S-CE	
Butternut	*Juglans cinerea*	T	
Butternut	*Juglans cinerea*	T	
Butternut	*Juglans cinerea*	T	
American ginseng	*Panax quinquefolis*	S-CE	
Southern shrew	*Sorex longirostris*	D	
Meadow jumping mouse	*Zapus hudsonius*	D	(PS)
Barbed Rattlesnake-root	Prenanthes barbata	E	
Orangefoot Pimpleback	Plethobasus cooperianus	E	LE
Northern Pine Snake	Pituophis melanoleucus melanoleucus	T	
Bewick's Wren	Thryomanes bewickii	S	

Notes:
Endangered
Threatened
Deemed in Need of Management
Special Concern Species
Commercially Exploited
Listed Endangered
Listed Threatened

4.6.2 Unique and Critical Habitats

Fort Campbell Property

According to Fort Campbell staff no unique and/or critical habitats are known to exist on the property.

Trigg County Property

There has been no complete survey conducted on the Trigg County property. The habitat is very similar to Fort Campbell; therefore, no unique and/or critical habitats are expected to exist on the property.

4.6.3 Consequences

4.6.3.1 Proposed Action

Fort Campbell Property

Flora — Short-term adverse effects on flora species could be expected. Habitat removal will take place in phases as the landfill needs are being met. Tennessee Solid Waste Processing and

Disposal Rule 1200-1-7-.04, which protects habitats and rare, threatened, and endangered species by establishing the 200-foot buffer zone along Fletcher's Fork Creek, as well as other regulations, will be implemented.

Fauna — Short-term moderate adverse and long-term beneficial effects are expected. Short-term moderate adverse effects to fauna species are expected due to the gradual grading, digging, and removal of trees and habitat during development of the landfill. Long-term beneficial effects will result from the establishment of a 200-foot vegetative buffer along the riparian zone of Fletcher's Fork Creek retention pond that will provide shallow water habitat for terrestrial and aquatic species and the addition of 670 acres of property to the Fort Campbell installation in Trigg County, Kentucky, and Stewart County, Tennessee.

Rare, Threatened, and Endangered Species — Short-term negligible and long–term minor beneficial effects may be anticipated concerning the threatened and endangered species. Short-term adverse effects are expected due to the loss of habitat on the Fort Campbell property during development of the landfill. However, conforming to Federal Environmental and Tennessee Solid Waste Regulations, riparian zones will be protected and the addition of ponds will provide endangered bat species with potential feeding areas.

Trigg County Property

Flora, fauna, and rare threatened and endangered species (RTE) — Long-term beneficial effects may be anticipated if the proposed alternative is chosen. According to the Endangered Species Management Plan (ESMP), Fort Campbell has management measures in place to protect RTE species and critical habitat if they should occur on the property.

4.6.3.2 No Action Alternative

Fort Campbell Property

Flora, fauna, and rare threatened and endangered species — no adverse effects on biological resources would be expected under this alternative.

Trigg County Property

Flora, fauna, and rare threatened and endangered species — there could be land-use changes on the property if this alternative is chosen. Bi-County will not utilize this property, so it will likely be sold. Federal and state regulations regarding protection of these species are not likely to be available.

4.6.4 Biological Assessment

To assure compliance with Section 7 of the Endangered Species Act, and in coordination with the Cookeville, Tennessee, Field Office of the USFWS, a Biological Assessment was prepared in 2005 by EnSafe to assess effects of the land transfer between Bi-County and Fort Campbell. The Biological Assessment concluded that the transfer of 358-acres of Fort Campbell property to Bi-County and the addition of approximately 300 acres of land with the 670-acre land transfer in Trigg County to Fort Campbell would add acreage for foraging. The potential effects to the gray bat, Indiana bat, and Bald Eagle are not likely to adversely affect the population. It is unlikely that the orangefoot pimpleback or the Price's Potato-bean will be adversely affected by this land transfer, since no suitable habitat is available within the project footprint.

A letter dated December 8, 2005 from USFWS was received by Gene Zirkle, Fish and Wildlife Biologist at Fort Campbell. The letter stated the Service was in agreement with the decision that the proposed action will have no effect on the Federal and state listed species.

4.7 Cultural Resources

4.7.1 Affected Environment

Cultural Resource Management Program

Fort Campbell Property

Cultural Resources are defined in Army Regulation 200-4 as:

- Historic Properties, protected through the National Historic Preservation Act (NHPA)
- Archaeological Resources, protected through the Archaeological Resources Protection Act
- Cultural Items as specified in the Native American Graves Protection and Repatriation Act
- Sacred Sites as referenced in the American Indian Religious Freedom Act (AIRFA) and Executive Order 13007 Collections of artifacts and records pertaining to the artifacts as directed in 36 CFR 79

Fort Campbell adopted an Integrated Cultural Resources Management Plan in 2002. Basic descriptions of the historical and archaeological background are set out in this document. The inventory of cultural resources as described in that document has been supplemented by the completion of several additional site detection surveys and several projects evaluating the eligibility of properties previously known but incompletely documented. Current and up-to-date inventory

information is maintained in a database and Geographic Information System application by the Fort Campbell Cultural Resources Program.

Fort Campbell has also entered into a Programmatic Agreement (PA) with the States of Kentucky and Tennessee and with the Advisory Council on Historic Preservation. This PA establishes a process alternative to that in 36 CFR 800 for considering the effects of operation, maintenance, and development at Fort Campbell on historic properties. Under the terms of this PA, the currently proposed action requires consultation with the two State Historic Preservation Offices since the proposed action does not fall within the exclusions listed in stipulation C1 nor in the list of project types in stipulation C2.

Of the 69,000 acres outside the cantonment that are subject to survey for historic properties, only 7,000 acres remain that have yet to receive some level of survey for archaeological sites. While this inventory is not yet complete, it provides a relatively good context against which the impacts of the proposed action can be judged in the specific areas that are affected by the proposed action.

Management of cultural resources and historic properties within the terms of these planning documents allows Fort Campbell to accomplish its training mission while preserving the cultural resources under its jurisdiction in a spirit of responsible stewardship.

Cultural Resources Inventory of 358-acre parcel:

Fort Campbell Property

All of the land proposed for the expanded landfill use has been included in areas previously contracted for archaeological survey. Most of the proposed landfill expansion land has been surveyed for archaeological sites by the University of Kentucky in 1982 (O'Malley, 1983). This survey was designed as a sample reconnaissance survey. The area searched during this project was considered a sample of the larger training area and used a method that combined pedestrian survey with occasional subsurface testing.

The remainder of the proposed landfill expansion area was surveyed by Panamerican Consultants in two separate projects (Albertson and Buchner, 1999) and (Albertson and Buchner, 2003). These two surveys by Panamerican Consultants were both designed as intensive surveys using a grid of shovel tests at an interval of 20 meters throughout the survey area. The most recent of these surveys has not been fully accepted as a final report by Fort Campbell due to its role in a continuing discussion regarding some concerns with the National Park Service Southeastern Archaeological Center (SEAC), the agency procuring and administering the actual survey contract.

Within and adjacent to the area of the proposed landfill expansion, the following sites were found by the three professional contract surveys.

SITE NUMBER	SURVEY	ORIGINAL NRHP RECOMMENDATION
40MT247	O'Malley 1983	P.E.
40MT248	O'Malley 1983	N.E.
40MT573	PCI (D.O. 3)	N.E.
40MT574	PCI (D.O. 3)	N.E.
40MT813	PCI (D.O. 8)	P.E.
40MT814	PCI (D.O. 8)	N.E.
40MT815	PCI (D.O. 8)	P.E.
40MT816	PCI (D.O. 8)	P.E.
40MT867	PCI (D.O. 8)	N.E.
40MT868	PCI (D.O. 8)	N.E.

Notes:
P.E.-Potentially eligible
N.E.-Not eligible

In 2003, Fort Campbell foresters conducting the complete forest inventory noted historic era artifacts on the ground in the previously surveyed area, and a subsequent field visit by the Cultural Resource Management (CRM) staff at Fort Campbell confirmed the existence of a previously unreported historic era archaeological site. This site was subsequently assigned the site number 40MT887.

On August 18, 2003, CRM program coordinator Richard Davis spoke by telephone with Mr. Joe Garrison regarding further identification needs for this proposed undertaking in this area. In accord with the advice received, Fort Campbell contracted the firm BHE to evaluate the eligibility of the four archaeological sites previously recommended as potentially eligible in or near the proposed landfill and also the previously unassessed historic era site, 40MT887. The evaluations of these five sites should complete the identification efforts needed for the proposed undertaking. Note that of the five potentially eligible sites, two of the five (40MT813 and 40MT815) actually fall outside the boundaries of the parcel proposed for transfer, but were included in the evaluation because of their proximity to the proposed transfer.

Evaluation:

All of the sites previously recommended as potentially eligible and the historic era site that was previously unassessed were given more thorough investigation and evaluation by BHE (Miller, Leery, and Bryant, 2004). The results of the evaluation investigation are included in a report of excavations and analysis carried out under the direction of Dr. Christopher Bergman. BHE

made the following recommendations:

SITE	BHE RECOMMENDATION
40MT813	Eligible
40MT816	Not Eligible
40MT815	Not Eligible
40MT247	Not Eligible
40MT887	Not Eligible

On the basis of the previous survey work and the subsequent detailed evaluations of the potentially eligible sites, only one archaeological site in the study should be considered eligible for the National Register of Historic Places (NRHP). This site is located outside the area to be transferred for use as a landfill, and is also within a riparian buffer zone. The Tennessee Historical Commission concurred with these evaluations by letter to Fort Campbell.

Cultural Resources Inventory of 670-acre parcel

Trigg County Property

EnSafe, on behalf of the Bi-County Solid Waste Management, contracted the archaeological firm of Brockington and Associates to conduct an inventory of both archaeological sites and possible historic structures on this parcel. The method and scope of this survey closely conformed to the site detection surveys most recently performed under contract to Fort Campbell and are intended to provide inventory information with comparable detail and reliability as those most recent Fort Campbell surveys have. This should facilitate Fort Campbell's ability to use the acquired parcel in support of its training activities and at the same time manage the historic properties within this parcel according to the terms of the current Integrated Cultural Resources Management Plan and Programmatic Agreement for Operations, Maintenance and Development at Fort Campbell.

The survey identified 27 archaeological sites: two mixed historic/prehistoric, nine prehistoric, and 16 historic. Twenty-five of the sites are in Trigg County, Kentucky, and two in Stewart County, Tennessee. The two sites in Stewart County are prehistoric lithic scatters. One site (15TR393) is recommended eligible for listing to the NRHP while seven others are recommended potentially eligible. All of the potentially eligible sites are historic sites that contain artifacts and standing structures and/or historic features and that retain a high degree of physical integrity. The other 19 sites, including all of the prehistoric sites, are recommended not eligible.

The table below indicates site numbers and eligibility recommendations. Four prehistoric sites are considered isolates and two historic sites were left out of the table. These sites were not given numbers and are considered not eligible for listing. Both Fort Campbell and Bi-County agree with

these evaluations.

SITE NUMBER	SURVEY	ORIGINAL NRHP RECOMMENDATION
15TR380	Brockington 2005	N.E.
15TR381	Brockington 2005	N.E.
15TR382	Brockington 2005	P.E.
15TR383	Brockington 2005	N.E.
15TR384	Brockington 2005	N.E.
15TR385	Brockington 2005	P.E.
15TR386	Brockington 2005	N.E.
15TR387	Brockington 2005	N.E.
15TR388	Brockington 2005	P.E.
15TR389	Brockington 2005	P.E.
15TR390	Brockington 2005	N.E.
15TR391	Brockington 2005	P.E.
15TR392	Brockington 2005	N.E.
15TR393	Brockington 2005	E.
15TR394	Brockington 2005	P.E.
15TR395	Brockington 2005	P.E.
15TR396	Brockington 2005	N.E.
15TR397	Brockington 2005	N.E.
15TR398	Brockington 2005	N.E.
40SW616	Brockington 2005	N.E.
40SW617	Brockington 2005	N.E.
N/A	Brockington 2005	N.E.
N/A	Brockington 2005	N.E.
N/A	Brockington 2005	N.E.
N/A	Brockington 2005	N.E.
N/A	Brockington 2005	N.E.
N/A	Brockington 2005	N.E.

Notes:
P.E. = potentially eligible
N.E. = not eligible
E. = eligible

In addition to the archeological sites, there are nine standing architectural resources (TR-148-TR-156). These resources consist of single structures (e.g., TR-156) and groups of the (TR-151). As more than one building might be grouped in an "architectural resource" more than 9 buildings were recorded. A total of 11 buildings comprise the 9 architectural resources. Five of these are recommended eligible for the National Register of Historic Places. Both Fort Campbell and Bi-County Landfill agree with these evaluations.

SITE NUMBER	SURVEY	ORIGINAL NRHP RECOMMENDATION
TR-148	Brockington 2005	P.E.
TR-149	Brockington 2005	P.E.
TR-150	Brockington 2005	N.E.
TR-151	Brockington 2005	P.E.
TR-152	Brockington 2005	P.E.
TR-153	Brockington 2005	P.E.
TR-154	Brockington 2005	N.E.
TR-155	Brockington 2005	N.E.
TR-156	Brockington 2005	N.E.

Notes:
N.E. = Not Eligible
P.E. = Potentially Eligible

4.7.2 Consequences

4.7.2.1 Proposed Action

Fort Campbell Property

The only archaeological site recommended NRHP eligible is located just north of Fletcher's Fork Creek. The creek is the boundary of the land transfer, and a buffer on both sides of the creek limits the proposed landfill activities because of other environmental constraints. Site 40MT813, the NHRP-eligible site, is outside the actual Area of Potential Effect for the Bi-County Landfill expansion. Since there are no historic properties actually within the Area of Potential Effect for the operations of the proposed landfill expansion, there are no impacts to the cultural environment for the proposed action at this location. For purposes of section 106 of the NHPA, there are no effects to historic properties for the undertaking of transferring the ownership of this parcel to provide for expansion of the landfill.

Trigg County Property

The only archaeological site recommended as NRHP eligible is located north of Turner Road in Trigg County, Kentucky. The proposed action transfers the site from private ownership, where there are few legal constraints on actions detrimental to the integrity of the properties, to federal ownership, where the management of the properties would follow the protective responsibilities of numerous federal laws and regulations as brought together in the Integrated Cultural Resources Management Plan and the general Programmatic Agreement currently in force at Fort Campbell. For purposes of the National Environmental Policy Act, the impact to the cultural environment should be considered beneficial. For purposes of section 106 of the National Historic Preservation Act, the effect of the undertaking should be considered Not Adverse.

4.7.2.2 No Action Alternative

Fort Campbell/Trigg County Properties

The No Action Alternative would have no impacts to the cultural environment at both parcels. For purposes of section 106 of the National Historic Preservation Act, the No Action Alternative would have no effect on historic properties at both locations.

4.7.3 Coordination with NHPA Review

As is specifically allowed at 36 CFR 800.8, this document is intended to provide sufficient information to support determinations of effect in compliance with section 106 of the NHPA. It describes an undertaking (the proposed action), identifies the historic properties in the Area of Potential Effect for the full proposed action, and assesses the effect of the proposed action on those historic properties.

4.8 Socioeconomic Conditions

4.8.1 Affected Environment

The regions of influence (ROI) are defined as the physical area that bounds the environmental, sociological, economic, or cultural feature of interest. For the purpose of this section Christian and Trigg Counties in Kentucky, and Montgomery and Stewart Counties in Tennessee were analyzed. The socioeconomic indicators considered for this area are regional economic activity, demographics, and quality of life, which include recreation and environmental justice. The ROI covers an area of 2,161 square miles.

The most recent years for socioeconomic indicators used for this section were 2000 and 2003. If the data was not available, the most recent data was used.

Regional Economic Development

Fort Campbell Property

Non-agricultural employment, including government and government enterprises, services, retail trade, and manufacturing, is the largest source of employment in the ROI. Government and government services, which provided 34 percent of total employment in 1999, are the largest source of jobs in the ROI. Most of the government jobs were associated with Fort Campbell (Tetra Tech 2003).

The average unemployment rate for the ROI in 2003 was approximately 6%. The percentage was above Kentucky's, Tennessee's, and the United States' average rate for the year. Stewart County,

Tennessee, had the highest rate of unemployment within the ROI at approximately 9 %, with Christian County, Kentucky, following with approximately 7 %.

According to the U.S. Census bureau, the 1999 average per capita personal income (PCPI) for each county in the ROI was $16,340, which is below the national average of $21,587. Montgomery and Trigg counties' PCPI was almost the same, averaging approximately $17,200. Stewart County's PCPI was the lowest at $14,611. According to information obtained from the U.S. Census bureau, PCPI increased an average of 6 % nationwide over the same period.

Trigg County Property

Non-agricultural employment, including government and government enterprises, services, retail trade, and manufacturing, is the largest source of employment in the ROI. Government and government services, which provided 34 percent of total employment in 1999, are the largest source of jobs in the ROI. Most of the government jobs were associated with Fort Campbell (Tetra Tech 2003).

The average unemployment rate for the ROI in 2003 was approximately 6%. The percentage was above Kentucky's, Tennessee's, and the United States' average rate for the year. Stewart County, Tennessee, had the highest rate of unemployment within the ROI which was approximately 9%. Christian County, Kentucky, fell next with approximately 7 % unemployment.

According to the U.S. Census bureau, the 1999 average PCPI for each county in the ROI was $16,340, which is below the national average of $21,587. Montgomery and Trigg counties' PCPI was almost the same, averaging approximately $17,200. Stewart County PCPI was the lowest at $14,611.

Demographics

Fort Campbell Property

The overall estimated average population of the ROI in 2003 was 236,700. Since 2000, there has been a 2 % increase in population. Within the ROI, Montgomery County, Tennessee, had the largest growth rate from 2000 to 2003 at 4.7%. Only one county — Christian County, Kentucky — had negative growth between 2000 and 2003. Overall, the area experienced a 23% increase in population from 1990 to 2000, substantially higher than the rate of growth for Kentucky, Tennessee, and the United States during the same period (Tetra Tech 2003).

Trigg County Property

The overall estimated average population of the ROI in 2003 was 236,700. Since 2000 there has been a 2 % increase in population. Within the ROI, Montgomery County, Tennessee, had the largest growth rate from 2000 to 2003 at 4.7%. Only one county — Christian County, Kentucky — had negative growth between 2000 and 2003. Overall, the area experienced a 23% increase in population from 1990 to 2000, substantially higher than the rate of growth for Kentucky, Tennessee, and the United States during the same period (Tetra Tech 2003).

4.8.1 Quality of Life

4.8.1.1 Recreation

Fort Campbell Property

Fort Campbell provides a variety of indoor and outdoor recreation for Kentucky and Tennessee residents, as well as for the military families. For the purpose of this section only outdoor recreation — specifically camping, fishing, and hunting — will be discussed.

Camping is permitted from April 1 through the day before opening season for deer hunting. Hunting and fishing are permitted in certain areas of Fort Campbell with either a Kentucky or a Tennessee fishing or hunting license and a Fort Campbell permit. Hunting of small game, deer, and turkey is open to the licensed public in permitted areas on the base during the designated hunting seasons. Youth deer and turkey hunts are held several times a year for persons 15 years of age or younger. For people with physical disabilities, a specific area on the base is reserved for use by only hunters who need mechanical aids to participate in hunting (Tetra Tech 2003).

Fishing is permitted year-round on the installation, provided areas are available for fishing. There is limited fishing available in this section of Fort Campbell.

Other recreational activities available on Fort Campbell with permits are horseback riding, motor cross, and hiking. These are activities that can be participated in year-round with permits.

Within the ROI is a leading recreational site called Land Between the Lakes (LBL). It is a National Recreation Area managed by United States Department of Agriculture (USDA) Forest Service. This 170,000-acre area is located in Western Kentucky and Tennessee and allows for a wide-range of recreational activities such as the ones mentioned above. The area is within an hour's drive of Fort Campbell.

Trigg County Property

Trigg County property is 670-acres of private property. At this time no hunting, fishing, or other recreational activities are allowed. During site visits to the property turkey, deer and signs of small game were visible. The habitat for species is in excellent condition with many logging roads and trails used as wildlife corridors.

Within the ROI is a leading recreational area called Land Between the Lakes. It is a National Recreation Area managed by United States Department of Agriculture Forest Service. This 170,000-acre area is located in Western Kentucky and Tennessee and allows for a wide range of recreational activities. The area is within an hour's drive of Fort Campbell.

Environmental Justice (Executive Order 12898)

On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.* The Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify potential disproportionately high and adverse impacts from proposed actions and to identify alternatives that might mitigate these impacts. Data from the U.S. Department of Commerce *2000 Census of Population and Housing* (US DOC, Census, 2001a) and from the *U.S. Census Current Population Survey 2004; Annual, Social and Economic Supplement* were used for this environmental justice analysis. Minority populations included in the census are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic, of two or more races, and other race (Tetra Tech, 2003). Poverty status used in this document is defined as low-income status with income below poverty level and identified as a family of four related individuals. The 2004 supplement defines the poverty level as that of a family of four with an income of $18,810 or less.

Fort Campbell Property

The ROI has a higher percentage of minority residents when compared to the state of Kentucky, but a lower percentage than either the state of Tennessee or the United States. In 2000, 81.7 percent of the ROI population was white and 13.5 percent was Black or African American. All other racial groups combined totaled approximately 5 percent of the population. In Kentucky, 90.1 percent of the population was white, 7.3 percent was Black or African American, and 4.1 percent was of other minority racial group or Hispanic or Latino origin. In Tennessee, 80.2 percent was white, 16.4 percent was Black or African American, and 5.6 percent was of other minority racial group or Hispanic or Latino origin (Tetra Tech, 2003).

According to the *Economic Research Service, United States Department of Agriculture, 2002,* the average poverty level in the ROI is 13.3 percent. This poverty level is 1.5 percent lower than the poverty level in Kentucky, and 0.3 percent lower than the poverty level in Tennessee. The ROI average poverty level is 1.2 percent higher than the United States poverty level.

Trigg County Property

The Trigg County property is privately owned and does not fall under the issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. However, the information previously mentioned applies to this property since it is located within the ROI of the project.

Environmental Justice (Executive Order 13045)

On April 21, 1997, the president issued Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This Executive Order recognizes that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed; because they eat, drink, and breathe more in proportion to their body weight; because their size and weight can diminish protection from standard safety features; and because their behavior patterns can make them more susceptible to accidents. Based on these factors, the President directed each federal agency to make it a high priority to identify and assess environmental health risks and safety risks that might disproportionately affect children. The President also directed each federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks that result from environmental health risks or safety risks to children (Tetra Tech, 2003).

Fort Campbell Property

Fort Campbell property abides by this regulation and the actions on the property have to be assessed for environmental health risks and safety risks to children.

Trigg County Property

At this time, the Trigg County property is private and it does not fall under this Executive Order.

4.8.2 Consequences

4.8.2.1 Proposed Action

Regional Economic Development

Fort Campbell Property

Long-term beneficial effects from this proposed action are anticipated if there is no need to relocate or to ship solid waste to another location (see Table 1). There are no other changes in the ROI economy should the property transfer take place.

Trigg County Property

No adverse effects on the proposed action are anticipated. There would be no change in the ROI economy with the transfer of property as Fort Campbell does not anticipate developing the approximately 670 acres of property in the future.

Demographics

Fort Campbell Property

No adverse effects due to the proposed action are anticipated. There would be no change in the population of the ROI.

Trigg County Property

No adverse effects would be anticipated. There would be no change in population of the ROI. The Trigg County property is and will remain vacant. There will be no displacement of people.

Quality of Life

Fort Campbell Property

Short-term and/or long-term beneficial effects may be anticipated if this action is chosen. No relocation of the landfill will be required and; therefore, no job loss will be anticipated and no new green space will be taken up by a landfill.

Trigg County Property

Long-term beneficial effects are anticipated. Federal and state regulations regarding protection of the property from adverse impacts will be in place when under federal ownership.

Short-term minor adverse effects regarding noise issues due to training maneuvers may be expected.

Recreation

Fort Campbell Property

Long-term moderate adverse effects are to be anticipated for some of the population on the ROI. The 358-acres will become private property and no recreation will be allowed. Currently the remoteness of the area deters easy access for recreational purposes.

Trigg County Property

Long-term minor beneficial effects would be anticipated to result from the proposed action. Approximately 312 additional acres of property will be acquired on Fort Campbell through the proposed action and will be added to federal lands for public access. Limited recreational opportunities may develop if the proposed action is accepted.

Environmental Justice (Executive Order 12898)

Fort Campbell Property

No adverse effects would be anticipated related to the proposed action.

Trigg County Property

At this time this property does not fall under the Executive Order and no adverse effects would be anticipated relating to the proposed action.

Environmental Justice (Executive Order 13045)

Fort Campbell Property

No adverse effects would be anticipated.

Trigg County Property

At this time this property does not fall under the Executive Order and no adverse effects would be anticipated.

4.8.2.2 No Action Alternative

Economic Development and Demographics

Fort Campbell Property

Long-term adverse effects would be anticipated for economic development. There would be long-term adverse effects on the economics in the region if the landfill expansion does not occur. Normal operating processes can continue for four more years and after that time the will be relocated and there is a potential for job loss in the area. If this occurs the cost of landfilling in the area would likely increase. These changes may affect the economics of the ROI (see Table 1).

There would be no change in the ROI population.

Trigg County Property

Short-and long-term adverse effects are expected to occur to the economics of the area if the no action alternative is chosen. The current landfill for the area will have four more years of life and then it will have to be relocated. Relocation could mean higher disposal cost for the area (see Table 1).

Demographics

Fort Campbell Property

No effects would be anticipated.

Trigg County Property

No effects would be anticipated.

Quality of Life and Recreation

Fort Campbell Property

Short-term minor adverse effects would be anticipated in the quality of life because with the potential relocation of the landfill job losses may become a reality. More recreational opportunities would be available to Fort Campbell residents and local residents in the county which would result in long-term minor beneficial effects.

Trigg County Property

Long-term minor adverse effects for residents in the ROI would be expected. Quality of life may change with the potential of job losses in the area. The 670-acres of property would remain under private ownership and the potential for limited recreation would not be available to the public.

Environmental Justice

Fort Campbell Property

No adverse effects would be anticipated under this action to Executive Orders 12898 or 10345.

Trigg County Property

No adverse effects would be anticipated. This property is private and does not fall under these orders.

4.9 Aesthetics and Visual Resources

4.9.1 Affected Environment

Aesthetic and visual resources consist of natural and man-made features on the landscape. These features can include vegetation, water surfaces, cultural and historic landmarks, and significant landforms or areas of considerable beauty. These features provide an environment of high visual quality to the ROI.

Fort Campbell Property

Fort Campbell property is topographically flat with thick vegetation. The property has three intermittent stream/wet weather conveyances that run through the property. The only open areas are where the fire lines and logging roads were constructed. Portions of the property can be viewed from 101st Airborne Road. No scenic highways or visually sensitive or federally protected areas can be viewed from this property.

Trigg County Property

Trigg County property is topographically gently rolling hills with some lower valleys in the floodplain. Scott Branch runs along the western boundary of the property to steep ravines that run along the eastern boundary of the property. The vegetation varies from open forest to thick underbrush. Open grassland plateaus are found intermittently within the 670-acre property.

No scenic highways or visually sensitive or federally protected areas can be viewed from this property.

4.9.2 Consequences

4.9.2.1 Proposed Action

Fort Campbell Property

Short- and/or long- term adverse effects would be expected. The construction of the landfill will cause the removal of vegetation and, from certain elevations, the construction will be noticeable. Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 regulates a buffer zone be maintained. There are no neighborhoods nearby that will be affected by the visual quality.

In the future, the impact of the expansion will lessen as the current phase of the landfill will block the view of the future development. The planned landfill expansion is moving north and west towards Fort Campbell.

At this time TDOT and the Tennessee Valley Authority have removed vegetation along the property right-of-way for U.S. 79 road expansion and to place utility lines. TDOT has been requested to replace buffer vegetation after the expansion has ended.

Allowing the landfill to remain in the same area will provide long-term beneficial effects to the region by reducing the need to ship solid waste to a new landfill. Relocation of a landfill would affect aesthetics and visual resources.

Trigg County Property

Long-term beneficial effects are anticipated. The visual aspects of the property will be maintained and enhanced through Best Management Practices followed by Fort Campbell since the property will no longer be under private ownership.

4.9.2.2 No Action Alternative

Fort Campbell Property

No adverse effects are to be anticipated if this alternative is chosen.

Trigg County Property

Short- and long-term adverse effects would be anticipated if this alternative is chosen. Bi-County will not utilize the property therefore it will most likely be sold. If this occurs the aesthetic and visual resources would be affected.

4.10 Cumulative Effects Summary

CEQ defines cumulative effects as "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7)."

Fort Campbell Property

Expansion of the Bi-County Landfill is planned on Fort Campbell property. To facilitate the expansion of the Bi-County Landfill on adjacent property, Bi-County will transfer approximately two acres for every acre received. Construction and operation activities at the landfill will occur over several years. During the life of the expanded landfill, there will be long-term adverse effects on topography and soils. Long-term moderate adverse effects on land use, air quality, noise, surface waters, recreation, and aesthetics/visual environments are anticipated. Additionally, there will be short-term intermittent minor adverse effects on water quality due to soil erosion during landfill

construction. In accordance with federal and the Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04, Bi-County would employ all possible safeguards to protect the environment during construction and operation activities at the landfill. Mitigation measures, such as the use of buffer zones and erosion control measures (detention and retention ponds) to protect wetlands and waterways will be implemented. Removal of only necessary vegetation and replanting native species will enhance visual aspects to the area and provide a sound barrier.

Long-term moderate and short-term moderate adverse cumulative effects on the biology of the property may be anticipated. Mitigation through the Tennessee Solid Waste Processing and Disposal Rule 1200-1-7-.04 allows for protection of the property such as 200-foot buffer zones along streams and will prevent long-term effects to the rare and endangered and threatened species mentioned in section 4.6.

Long-term beneficial effects on the human environment are anticipated.

Trigg County Property

Fort Campbell borders Trigg County property on the east side therefore during training, it is determined no adverse effects on air, soils, water resources, and biology are anticipated.

Long-term beneficial effects with the acquisition of the land by Fort Campbell would be expected. State and federal regulations regarding the protection of the property will be adhered to. Also, Fort Campbell will follow management measures outlined in the INRMP and utilize all methods available to protect the environment during activities.

The cumulative effects of the activities of the action as well as surrounding land activities are anticipated to be long-term beneficial to minor or negligible.

4.11 Mitigation Summary

Mitigation measures for the proposed transfer of 670 acres to Fort Campbell in exchange for 358 acres currently belonging to Trigg County would be expected to reduce, avoid, or compensate for most adverse effects of the exchange. Table 6-1 summarizes the proposed mitigation measures to be taken for each of the affected resources.

Table 6
Summary of Mitigation Measures
Proposed Action

Resource	Fort Campbell Property	Trigg County Property
Land Use	Adhere to Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04. Area land use includes similar operations. Property location would optimize proposed land use.	Adhere to current Army Regulations found in AR 200-1 and to provisions found in the Fort Campbell INRMP.
Air Quality	Adhere to Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04. Class I solid waste is bales reducing debris and odor. Spray applied to the vertical face of bales in accordance with operational procedures. Apply water and gravel to haul roads when necessary. Bi-County utilizes flaring to mitigate methane gas emissions. Gas to energy feasibility. Vehicle Maintenance & replacement/lease program is utilized by Bi-County. Title V permitting requirements will apply.	Adhere to Title V permitting Monitor air quality When maneuvers occur, apply water and gravel to roads when necessary. Vehicle Maintenance.
Noise	Use setbacks, berms, and plantings of natural vegetation to attenuate noise caused by construction and operations. Construction and operations activities to be regulated by Tennessee Occupational Safety and Health Administration. Landfill expansion area will be more isolated than current operations.	Comply with federal, state, interstate, and local noise control regulations. Training during growing season would lessen impacts.
Topography and Soils	Adhere to Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04 addressing erosion control methods. Use appropriate BMPs (such as silt fences, straw bale dikes, diversion ditches, riprap channels, water bars, and water spreaders) to reduce soil erosion and sedimentation.	Adhere to Management Measures found in AR 200-1 and to Fort Campbell INRMP regarding erosion control methods. Revegetate when necessary and maintain buffers along sensitive areas for erosion.
Water Resources	Adhere to Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04. Implement BMPs to control surface erosion and runoff (e.g., silt fencing, hay bales). Follow protocols outlined in the current storm water NPDES permit and state sediment and erosion control guidelines	Adhere to Army Regulations 200-1 and Management Measures found in the INRMP. Monitor streams and water quality. Reseed and revegetate with native plantings whenever possible.

Table 6
Summary of Mitigation Measures
Proposed Action

Resource	Fort Campbell Property	Trigg County Property
	as well as construction permits. - Buffer zone from wetland to be maintained. - Implement Bi-County Storm Water Pollution Prevention Plan (SWPPP) - Reseed and revegetate with native plantings whenever possible. - Design and Construct retention and detention ponds	
Biological Resources	- Transfer of 670 acres to Fort Campbell will provide additional habitats for biological resources <u>Vegetation</u> - Adhere to Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04. - 200 feet buffer will protect wetland species. - Plant native trees and drought-tolerant vegetation whenever possible. - Employ erosion control practices and tree protection devices at all proposed sites to protect vegetation and habitat areas. <u>Wildlife</u> - Adhere to Federal regulations and Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04 such as: - 200 feet buffer from center of Fletcher's Fork Creek to protect bat foraging. - Preserve associated blocks of existing native vegetation as required buffers and wildlife corridors. - Protect habitat of threatened and endangered species. <u>Wetlands</u> - Avoid construction activities within 200 feet of known wetlands. If it is necessary to disturb wetlands, conduct a wetland delineation to determine exact wetland boundaries and acreage. - After delineation, obtain appropriate Section 404 permits from the Corps of Engineers and/or the appropriate state regulatory agencies to drain and fill wetlands. If mandated by the Corps, mitigate for losses of wetland acreage with constructed wetlands.	<u>Vegetation</u> - No mitigation is necessary; however, the following should be considered: - Minimal disturbance for some species may be beneficial. - 200 feet buffer will protect wetland species. - Plant native trees and drought-tolerant vegetation whenever possible. - Employ erosion control practices and tree protection devices at all proposed sites to protect vegetation and habitat areas. - Allow native species growth to occur. <u>Wildlife</u> - No mitigation is necessary if adherence to Army 200-1 and INRMP is complied with. The following should be considered: - 200 feet buffer from center of waterway to protect bat foraging. Preserve associated roads and large blocks of existing native vegetation as buffers and wildlife corridors. - Protect habitat of threatened and endangered species. <u>Wetlands</u> - Avoid construction activities within 200 feet of known wetlands. If it is necessary to disturb wetlands, conduct a wetland delineation to determine exact wetland boundaries and acreage. - After delineation, obtain appropriate Section 404 permits from the Corps of Engineers and/or the appropriate state regulatory agencies to drain and fill wetlands. If mandated by the Corps, mitigate for losses of wetland acreage with constructed wetlands.

Table 6
Summary of Mitigation Measures
Proposed Action

Resource	Fort Campbell Property	Trigg County Property
Cultural Resources	▪ Adherence to Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04 will protections for cultural resources. ▪ For known archaeological sites - avoidance and protection using buffer area(s). ▪ Consult with State Historic Preservation Office (SHPO), federally recognized Indian tribes. ▪ Transfer of 670 acres to Fort Campbell will provide additional habitats for biological resources	▪ Adhere to AR 200-1 and Fort Campbell INRMP for protection of sites. Potential sites are being evaluated at this time. ▪ For known archaeological sites—avoidance and protection using a buffer area. ▪ Consult with SHPO, Federally recognized Indian tribes.
Socioeconomics and Protection of Children	▪ Place barriers and "No Trespassing" signs around construction sites where applicable.	▪ No mitigation measures are needed at this time. No recreation will occur on the property if the proposed action is chosen.
Aesthetic and Visual	▪ Adhere to Tennessee Solid Waste Processing and Disposal Rules 1200-1-7-.04. ▪ Maintain trees and native vegetation wherever possible. ▪ Revegetate when necessary ▪ Future landfill design will consider aesthetic and visual effects. ▪ TDOT to construct buffer on U.S. 79 ▪ Landfill expansion will be more remote/isolated ▪ Landfill expansion will provide for capital improvements/maintenance to facility processing structures.	▪ *No adverse impacts to land use are anticipated*

5.0 ENVIRONMENTAL CONSEQUENCES AND CUMULATIVE IMPACTS FINDINGS AND CONCLUSIONS

This EA has been prepared to evaluate the effects on the natural and human environment from activities associated with the transfer of land between Fort Campbell and Bi-County. The EA has examined the preferred alternative (implementation of the land swap and expansion of the Bi-County Landfill) and the no action alternative.

5.1 Findings

The evaluation of the proposed action, identified as the preferred alternative, indicates that the physical and socioeconomic environments at the Fort Campbell property and Trigg County property would not be significantly affected. Although the physical and environmental characteristics of the Fort Campbell property present a variety of environmental constraints to its proposed use, Bi-County would work around these constraints to avoid, minimize, or mitigate the potential adverse effects whenever possible. The predicted consequences on the resources are briefly discussed below. Table 7-1 provides a summary and comparison of the consequences of the proposed action versus the no action alternative.

5.1.1 Consequences of the Proposed Action

5.1.1.1 Land Use

Fort Campbell Property

Long-term moderate adverse effects to the land use are anticipated. The land is currently undeveloped and located immediately to the north and west of the Bi-County Landfill with the Fort Campbell landfill located to the east.

Long-term beneficial affects would be expected as well, because solid waste disposal for the region would continue to be available to the communities and a relocated landfill could further adversely affect land use in the region.

Trigg County Property

Long-term beneficial effects are anticipated with the proposed action. Currently the area land is undeveloped and is located on the western border of Fort Campbell Military Reservation. The property would be transferred from Bi-County to Fort Campbell. The land transfer would allow the property to be subject to federal land management/protection. If the property were to remain with Bi-County, the property would not be subject to these protections.

Air Quality

Fort Campbell Property

Long-term moderate adverse effects may be anticipated with the proposed expansion of the landfill. Title V permitting is required in the near future. Fugitive emissions associated with initial construction activities and truck traffic will be the predominant sources of air emissions from this proposed action.

Trigg County Property

The proposed transfer of property from private ownership to Fort Campbell will have long-term beneficial effects regarding air quality. Fort Campbell is required to follow federal and state regulations and the property will be protected by these regulations.

Noise

Fort Campbell Property

Construction on the site will increase the noise levels on Bi-County Landfill and on Fort Campbell. Long-term moderate effects of the proposed action may be anticipated due to construction activities at the landfill.

Long-term beneficial effects are anticipated.

Trigg County Property

Long-term moderate adverse effects would be expected due to military training and helicopter flyovers as a result of the proposed action.

Long-term beneficial effects regarding the property would be expected. The property will fall under federal protection and noise will be regulated by state and federal governments.

Topography

Fort Campbell Property

Long-term adverse effects will be expected on the topography of the portion of the property (central and eastern portions) that is designated for expansion of the landfill. As landfill cells are created modification of the existing topography will occur.

Long-term beneficial effects are anticipated because the use of the current landfill will prevent the need for relocation and the possible adverse effects to an area that is isolated and currently sits between two landfills, the Bi-County Landfill and the Fort Campbell Class IV landfill.

Trigg County Property

The proposed action will have no adverse effects on the topography of the property, but long-term beneficial effects would be expected. The topography of the property will not change because Fort Campbell has no plans to develop the property.

Geology

Fort Campbell Property

No adverse effects are expected on the property. The existing landfill's operations meet or exceed Subtitle D regulations, which include a flexible membrane liner and a leachate collection system.

Trigg County Property

There will be no adverse effects to the geology of the property. There are currently no plans by Fort Campbell to develop the property so long-term beneficial effects would be expected.

Soils

Fort Campbell Property

Long-term adverse effects to soil characteristics are expected on the property due to construction activities at the landfill.

Trigg County Property

Short-term minor adverse effects are expected on site soils during training periods. It is expected that only sporadic vehicular traffic would occur during military training exercises on the property.

Long-term beneficial effects regarding soils can be expected with the land transfer from private to federal property. The property will be protected by federal and state regulations and there are no plans for development.

Prime Farmland

Fort Campbell Property

No adverse effects would be expected by the proposed action. According to soils documentation and field observation approximately 20 percent of land is considered potential prime farmland.

Trigg County Property

The proposed action will have no adverse effects. The land will not be utilized as farmland.

Surface Waters

Fort Campbell Property

Short-term moderate adverse effects and long-term minor adverse effects would be expected due to construction activities at the landfill.

Long-term minor adverse effects to surface waters would be reduced after construction of the landfill cells and borrow area.

Trigg County Property

Short-term intermittent minor adverse effects would be expected on the property due to military training. An impact zone associated with Fort Campbell is located east of the subject property. The subject property receives storm water from the impact zone via tributaries and streams. Areas considered impact zones, zones of potentially lower water quality, are regulated for water quality standards. Fort Campbell conducts intensive water quality monitoring in all streams flowing through impact zones.

Long-term beneficial effects regarding surface water resources would be expected. State and federal regulations regarding proper protection of surface waters will be followed.

Groundwater

Fort Campbell Property

Short-term intermittent minor adverse effects and long-term negligible adverse effects would be expected for groundwater resources. The Tennessee Solid Waste Processing and Disposal Rule 1200-1-7.04 specifically addresses leachate migration control standards, geologic buffers, composite liner, leachate collection, and final cover.

Trigg County Property

Short-term intermittent minor adverse effects would be expected for groundwater resources. Fort Campbell will adhere to Best Management Practices for water quality as specified in the Integrated Natural Resources Management Plan (INRMP) and will comply with State of Tennessee and State of Kentucky groundwater regulations.

Long-term beneficial effects regarding groundwater resources would be expected. State and federal regulations regarding proper protection of groundwater will be followed.

Floodplains and Wetlands

Fort Campbell Property

Short-term intermittent minor adverse effects are expected on floodplains and wetlands due to the construction of the landfill. No impacts to floodplains are anticipated.

Trigg County Property

Long-term beneficial effects are anticipated due to acquisition of the property by federal government. This will allow protection under state and federal regulations regarding floodplains and wetlands.

Long-term beneficial effects are to be expected. Protection of these areas following federal and state regulations is anticipated.

Biological Resources

Flora, Fauna, Threatened and Endangered Species, and Unique and/or Critical Habitats

Fort Campbell Property

Effects on flora, fauna, and threatened and endangered species are short-term moderate, and short-term minor and negligible adverse effects respectively; long-term minor beneficial effects are expected for fauna, and threatened and endangered species are also anticipated.

Trigg County Property

Long-term beneficial affects are anticipated for flora, fauna, and threatened and endangered species. Federal and state regulations will be adhered to once the property is in federal ownership.

Historical and Cultural Resources

Fort Campbell Property

No effects on the site are anticipated. Phases I, II, and III site investigations have been conducted on the property.

Trigg County Property

No effects on the site are anticipated.

Socioeconomic Conditions

Regional Economic Development, Demographics, Quality of Life, Recreation, and Environmental Justice

Fort Campbell Property

No adverse and/or short- and long-term beneficial effects would be expected for economic development, and quality of life. The expansion of the landfill will allow longer life of the landfill (see Table 1). Jobs will remain in the area which is anticipated to increase economic development and quality of life. Long-term moderate adverse effects on recreation would be expected because the landfill expansion will place the property under private ownership and no recreation will be allowed.

Demographics and environmental justice are not expected to be affected by the proposed action.

Trigg County Property

No adverse effects for demographics and short-term and long-term beneficial effects would be anticipated for quality of life and potentially for economic development. The landfill life will increase which will not affect the residents by job loss in the area by relocating the waste disposal. The recreational opportunities that do not exist at this time may open to the public when the land comes under federal ownership.

Demographics and environmental justice are not expected to be affected by the proposed action.

Aesthetic and Visual Resources

Fort Campbell Property

Short- and long-term adverse effects and long-term beneficial effects would be expected.

Long-term beneficial effects would be associated with the construction of retention basins on the property to manage storm water runoff. The retention basins will provide aesthetic value to the perimeter of the landfill by providing shallow water habitat for vegetation, terrestrial, and aquatic species.

Trigg County Property

Long-term beneficial effects are anticipated. The visual aspects of the property will be maintained and enhanced through federal regulations regarding land use by Fort Campbell since the property will no longer be under private ownership.

5.1.2 Consequences of the No Action Alternative

Only those resources that would be affected by the no action alternative are discussed below.

Land Use

Trigg County Property

The property is heavily wooded with some agricultural activity to the west and south. At this time there is very little use of the property. Short-term and long-term adverse effects may be anticipated. The property is not likely to be utilized by Bi-County, thus the property would most likely be sold and/or revenue producing alternatives would be explored.

Long-term effects on the property and surrounding land use will be dependant upon property ownership.

Air

Trigg County

Short-term and long-term adverse effects may be anticipated on the ambient air. The property is not likely to be utilized by Bi-County, thus the property would most likely be sold and/or revenue producing alternatives would be explored.

Topography

Trigg County Property

Short-term and long-term adverse effects may be anticipated on topographic conditions.

Geology

Trigg County Property

Short-term and long-term adverse effects may be anticipated on the geologic conditions.

Soils

Trigg County Property

Short-term and long-term adverse effects may be anticipated on soils.

Surfaces Waters, Groundwater, and Floodplains and Wetland

Trigg County Property

If the property were to remain with Bi-County, the property would not be subject to state and federal land management requirement/protection and it is anticipated that there could be short-term and/or long-term adverse effects on the property.

Biological Resources

Flora, Fauna, Rare, Threatened, and Endangered Species, and Unique and/or Critical Habitat

Trigg County Property

There could be land use changes on the property if the no action alternative is chosen. Bi-County will not utilize this property, so it will most likely be sold. It is likely that short-term and/or long-term adverse effects to the flora, fauna, and rare, threatened, and endangered species will occur due to loss of habitat.

Socioeconomics

Regional Economic Development

Fort Campbell Property

There would be long-term adverse effects on the economics in the region if the landfill expansion does not occur. At this time life expectancy of the landfill is four years and at the end of that time landfill relocation is expected. If this occurs the cost of landfilling in the area would likely increase (see Table 1)***.***

Trigg County

Short-term and long-term adverse effects on the economics in the area could be anticipated. Stewart County utilizes Bi-County Landfill and if relocation occurs an increase in cost of landfilling could occur.

Quality of Life

Fort Campbell Property

Short-term minor adverse and long-term minor beneficial effects are anticipated. No relocation of the landfill will take place.

Trigg County Property

Long-term minor adverse effect could be anticipated. The property owned by Bi-County could be turned into a landfill or turned into some undesirable development.

Recreational

Trigg County

Long-term minor adverse effects could be expected. If the property is transferred to Fort Campbell it will be protected under state and federal regulations allowing the public to potentially use the property for recreational purposes if training allows.

Aesthetic and Visual Resources

Trigg County Property

Short-and long-term adverse effects would be anticipated if this alternative is chosen. Bi-County will not utilize the property therefore it will most likely be sold. If this occurs the aesthetic and visual resources would be affected.

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Table 7
Summary of Potential Environmental and Socioeconomic Consequences

Resource	Proposed Action		No Action Alternative	
	Fort Campbell	Trigg County	Fort Campbell	Trigg County
•Land Use	•Long-term moderate effects	•Long-term beneficial	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Air Quality	•Long-term moderate effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Noise	•Long-term moderate effects •Long-term beneficial effects	•Long-term moderate adverse effects •Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
Topography, Geology, and Soils				
•Topography	• Long-term adverse effects •Long-term beneficial effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Geology	•No effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Soils	•Long-term adverse effects	•Short-term minor adverse effects •Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Prime Farmland	•No adverse effects	•No adverse effects	•No adverse effects	•No adverse effects
Water Resources				
•Surface Waters	•Short-term moderate adverse effects •Long-term minor adverse effects	•Short-term intermittent minor adverse effects •Long-term beneficial effects	•No adverse effects	• Short-term adverse effects
•Groundwater	•Short-term intermittent minor adverse effects •Long-term negligible adverse effects	•Short-term intermittent minor adverse effects •Long-term beneficial effects	•No adverse effects	• Long-term adverse effects
•Floodplains & Wetland	•Short-term intermittent minor adverse effects to wetlands •No impact to floodplains	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects

Table 7
Summary of Potential Environmental and Socioeconomic Consequences

Resource	Proposed Action		No Action Alternative	
	Fort Campbell	Trigg County	Fort Campbell	Trigg County
Biological Resources				
•Flora	•Short-term adverse effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Fauna	•Short-term moderate adverse effects •Long-term beneficial effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
•Rare, Threatened and Endangered Species	•Short-term negligible effects •Long-term minor beneficial effects	•Long-term beneficial effects	•No adverse effects	• Short-term adverse effects •Long-term adverse effects
Cultural Resources				
•Cultural Resources	•No effects	•No effects	•No effects	•No effects
Socioeconomics				
•Regional Economic Development	•Long-term beneficial effects	•No adverse effects	•Long-term adverse effects	• Short-term adverse effects •Long-term adverse effects
•Demographics	•No adverse effects	•No adverse effects	•No effects	•No effects
•Quality of Life	•Short-term beneficial effects and/or •Long-term beneficial effects	•Long-term beneficial effects •Short-term minor adverse effects	•Short-term minor adverse effects •Long-term minor beneficial effects	•Long-term minor adverse effects
•Recreational	•Long-term moderate adverse effects	•Long-term minor beneficial effects	•No effects	•Long-term minor adverse effects
•Environmental Justice	•No adverse effects	•No adverse effects	•No adverse effects	•No adverse effects
•Aesthetic and Visual	•Short- and long-term adverse effects •Long-term beneficial effects	•Long-term beneficial effects	•No adverse effects	•Short-term adverse effects •Long-term adverse effects

5.2 Conclusions

Fort Campbell and Trigg County Properties

Based on the analysis performed in this EA, implementation of the preferred alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment if all appropriate mitigation measures and BMPs are properly enacted. Preparation of an Environmental Impacts Statement is not required for this project. An issuance of a Finding of No Significant Impact would be appropriate.

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7.0 LIST OF PREPARERS

Lee Carolan
Senior Environmental Biologist
B.S., Biological Sciences/Secondary Education, Arkansas Tech University
Years of Experience: 16

Jose Garcia, CHMM
Biologist
Animal Biology, Middle Tennessee State University
Years of Experience: 7

Joseph George, PG
Geologist/Project Manager
M.S., Geology, Southern Illinois University
B.A., Geological Sciences, State University of New York at Geneeseo
Years of Experience: 23

Shannon McWaters, CHMM
Environmental Scientist
B.S., Environmental Science, Mercer University
Years of Experience: 6

Eddie Rogers
CAD Specialist
A.S. in Drafting/Design, Murray State University
B.S. in Drafting/Design, Murray State University
Microstation Training, The Bentley Institute
Years of Experience: 11.5

Amy Spann, PE, CHMM,
Professional Engineer
B.S., Civil and Environmental Engineering, Tennessee Technological University
Years of Experience: 7

Kirby Tapp
Project Manager
B.S., Environmental Management, University of Evansville.
Years of Experience: 14

Shaun Winter, P.G.
Senior Project Manager
M.S., Geography, Western Kentucky University
B.S., Geology, Western Kentucky University
Years of Experience: 20

8.0 CONSULTATION

In order to assess any comments by the public and by the various government agencies, Bi-County and Fort Campbell will solicit comments through the following process: (1) send letters referring to the draft EA to federal agencies for response (the federal agencies are required to respond); (2) Send copies of the draft EA to Tennessee Department of Environment and Conservation (TDEC), Permits and Services Division (will solicit comments from other TDEC divisions and return these to Bi-County/Fort Campbell) and the Kentucky and Tennessee Historical Commission for review; (3) wait approximately fifteen (15) days for any responses; and (4) finalize the EA report with any comments and issue an Environmental Impact Statement (EIS) or Finding of No Significant Impacts (FONSI) as appropriate.

The key agencies, individuals, and groups to whom the Bi-County/Fort Campbell needs to send information about the project include the following:

STATE AGENCIES:

Tennessee Department of Environment and Conservation
Environmental Policy Office
Attn: Mr. Alan Leiserson
20th Floor L&C Tower
401 Church Street
Nashville, TN 37243-1530
(615) 532-0125

Tennessee Historical Commission
Mr. Herbert Harper, Director
Clover Bottom Mansion
2941 Lebanon Road
Nashville, TN 37243-0442
(615) 532-1550

Kentucky Heritage Council
Attn: Mary Jean Atchison
300 Washington Street
Frankfort, KY 40601
(502) 564-7005

Kentucky Environmental Protection Cabinet
Attn: Allan Bryant, Section Supervisor
14 Reilly Road
Frankfort, KY 40601
(502) 564-2150

Kentucky Department of Fish and Wildlife
Dr. Jonathan Gassett, Commissioner
#1 Game Farm Road
Frankfort, KY 40601
(800) 858-1549

FEDERAL AGENCIES:

U. S. Fish and Wildlife Service
Mr. Lee Barclay
446 Neal Street
Cookeville, TN 38501
(931) 528-6481 ext. 212

PWBC Environment
Mr. Eric D. Cloud, P.E.
NEPA / Wildlife Program Manager
Bastogne Building 865
Fort Campbell, KY 42223

Regional Environmental Officer
Office of Environmental Policy and Compliance
U.S. Department of Interior
Mr. Greg Hogue
Russell Federal Building, Suite 1144
75 Spring Street SW
Atlanta, Georgia 30303
(404) 331-4524

9.0 PERMITS

Fort Campbell Property

As stated in **Section 3.3.1**, Bi-County would be required to obtain a major modification to its existing Tennessee Solid Waste permit and/or obtain a new permit to expand landfill air space. The Bi-County Landfill would be required to obtain the appropriate NPDES permit in order to meet construction-related water discharge requirements.

Should the U.S. Army Corps of Engineers determine that jurisdictional wetlands will be impacted by the proposed action, the Bi-County Landfill would need to apply for a general or individual permit under Section 404 of the Clean Water Act (33 United States Code 1251 *et seq.*). The extent of the wetlands affected would, in part, determine the type of permit required for the proposed action.

Trigg County Property

No development is planned at this time.

10.0 ENVIRONMENTAL DATA

Fort Campbell Property

An environmental database search was conducted covering the American Society for Testing and Materials (ASTM) approximate minimum search distances for all standard environmental record sources. The database research report, dated April 14, 2005, was provided by EDR of Southport, Connecticut. The environmental record search provides regulatory agency information from federal and state environmental agencies for all properties within a specified radius of the subject property. A copy of the environmental record search report and a map of the area covered are in Appendix D.

An Environmental Baseline field survey was conducted on the property on April 18, 2005, by Mrs. McWaters and Ms. Carolan of EnSafe to determine current site uses and identify recognized environmental conditions and historical recognized environmental conditions. Regulatory information was obtained during that time period. The survey method involved traversing accessible portions of the property within the 358.55 acres. Any unusual objects (e.g., stained soils or stressed vegetation) were examined further. The Environmental Baseline Survey report indicated based on field observation and regulatory review that no compliance issues or items of concern were identified on the subject property. Photographs illustrating conditions observed during the site visit are in Appendix B.

Fort Campbell has conducted extensive evaluations of the property and the applicable data has been referred throughout this report.

Trigg County

An environmental database search was conducted covering the ASTM approximate minimum search distances for all standard environmental record sources. The database research report, dated April 14, 2005, was provided by EDR of Southport, Connecticut. The environmental record search provides regulatory agency information from federal and state environmental agencies for all properties within a specified radius of the subject property. A copy of the environmental record search report and a map of the area covered are in Appendix D.

An environmental baseline field survey was conducted on the property April 18, 2005 by Mrs. McWaters and Ms. Carolan of EnSafe to determine current site uses and identify recognized environmental conditions and historical recognized environmental conditions. The survey method involved traversing accessible portions of the property within the 670 acres. Any unusual objects (e.g., stained soils or stressed vegetation) were examined further. The Environmental Baseline

Survey report indicated based on field observation and regulatory review that no compliance issues or items of concern were identified on the subject property. Photographs illustrating conditions observed during the site visit are in Appendix B.

11.0 DISTRIBUTION LIST

LIBRARIES

Christian County Library
101 Bethel Street
Hopkinsville, KY 42240

Clarksville-Montgomery County Library
350 Pageant Lane, Suite 404
Clarksville, TN 37040

Stewart County Library
102 Natcor Drive
Dover, TN 37058

Robert F. Sink Library
Building 38, Screaming Eagle Blvd.
Fort Campbell, KY 42223

John L. Street Library
244 Main Street
Cadiz, KY 42211-9153

FEDERAL AGENCIES:

U. S. Fish and Wildlife Service
Mr. Lee Barclay
446 Neal Street
Cookeville, TN 38501
(931) 528-6481 ext. 212

Mr. Eric Cloud, P.E.
DPW - Environmental Division
16th Street
Bastogne Building 865
Fort Campbell, KY 42223

U.S. Army Corps of Engineers
Residential Engineer
Attn: Robert Wright
849 Georgia AVE
Fort Campbell, KY 42223-5108

Mr. Greg Hogue
Regional Environmental Officer
Office of Environmental Policy and Compliance
U.S. Department of Interior
Russell Federal Building, Suite 1144
75 Spring Street SW
Atlanta, Georgia 30303
(404) 331-4524

Appendix A
Site Figures

Appendix B
Site Photographs

Appendix C
Correspondence

Appendix D
Environmental Data Resource Reports

Appendix E

PA with KYSHOP/TNSHPO and Advisory Council on Historic Preservation

Appendix F
Fort Campbell Flora List

Appendix G
Fort Campbell Vertebrate List

Appendix H
RONA's for Bi-County/Trigg County